

Running head: ADAPTATION AND ADJUSTMENT

THE TRANSITION TO UNIVERSITY: ADAPTATION AND ADJUSTMENT

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Abstract

Beginning university can be conceptualized as a stressful life event as both positive aspects and several new challenges are associated with the transition (Hudd, Dumlao, Erdmann-Sager, Murry, Phan et al., 2000; Kerr, Johnson, Gans, Krumrine, 2004; Lamothe, Currie, Alisat, Sullivan, Pratt et al., 1995). Sometimes a poor transition may result in a student's inability to complete their degree. It is important to develop a more thorough understanding of the transition to university in order to improve student retention. The present investigation considered a range of demographic, psychosocial, and health behaviours that may be related to a student's ability to adapt to university. These variables were investigated using a short-term longitudinal design over the first year of university. Participants (Time 1 $N = 229$, Time 2 $N = 73$) consisted of first year University of Saskatchewan students (age, $M = 18.46$, $SD = 1$). Results suggested that approximately 1/3 of the students found the transition to university to be difficult and that in general women had a more difficult time than men in terms of social and personal/emotional adjustment. There was no significant difference in academic adjustment or achievement between men and women. Psychosocial variables and health behaviours were related to one another such that greater physical activity levels went hand in hand with more adaptive coping and higher levels of social support and self-esteem. During the first semester, easier transitions and better adjustment were largely predicted by more adaptive coping, good social support, better grades and fewer daily hassles. For women, second semester transition experiences and adjustment measures were strongly predicted by the same measures as observed in the first semester.

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1. The Transition to University: Adaptation and Adjustment

The transition to university has been characterized as a stressful life event. Even though there are many positive aspects associated with this time, there are also several new challenges (Lamothe, Currie, Alisat, Sullivan, Pratt et al., 1995). Sometimes a poor transition results in a student's inability to complete their degree. According to a study conducted at the University of Saskatchewan, 28.4% of the students who began their university education in the College of Arts and Science in 1998 did not continue from their first to second year (Student and Enrolment Services, 2003). These students may not have re-registered for a number of reasons. Some may have not done well enough in their studies to meet promotion standards whereas others may have chosen not to continue. It is possible that some students decide to take time off with plans of returning later or chose to attend a different school. Wintre, Bowers, Gordner and Lange (2006) found that 'university leavers' were a heterogeneous group where reasons to leave included transfers to other universities or to colleges, temporary leaves, decisions to drop out, and failures to meet required academic standards. Besides being a difficult situation for students, university attrition is financially costly. If a student does not finish their degree, the financial resources the university has used to educate them can not be refunded. For the student, tuition and other university related costs also can not be recouped. As cited in the University of Saskatchewan 1999-2000 Annual report, Pezer (1998) showed that during the 1997-98 academic year, student attrition was expensive costing students approximately \$2 million and the university \$6 million. A more thorough understanding of the transition situation may lead to increased student retention and therefore prevent this loss of financial resources for universities and also for their students. As a naturally occurring potentially stressful event, the transition to university also provides an excellent context within which to explore behavioral and psychosocial factors that serve to either exacerbate or ameliorate the experience of stress. Accordingly, the purpose of the present research project was to investigate the impact of protective and risk factors for late adolescents and young adults during their first year of university. Using a short-term longitudinal design, the current investigation considered a range of adjustment outcomes including social, academic, and personal/emotional

adjustment to university as well as students' perceptions of the nature of their transition experiences at two time points during the first year of university (fall and spring).

The university transition, although not inherently positive or negative in and of itself, involves many new challenges. In one study of students living on a university campus, over half reported feeling stressed "all,... most", or "a good bit" of the time (Hudd, Dumlao, Erdmann-Sager, Murry, Phan et al., 2000). Some of the challenges that new students face include dealing with new and more difficult academic demands, living away from home for the first time, and establishing new friendships. Alongside the stress associated with the new demands of the academic realm of university, a student's new living situation may also require some adjustment. For example, moving away from home to attend university can produce feelings of homesickness that are related to elevated levels of psychological disturbance (Fisher & Hood, 1988). According to Chickery (1969), there is a substantial amount of stress associated with facing new challenges without the security of home. The move away from home undermines the individual's traditional support system of family and friends.

Although entering university is a normative life event, the many life changes involved in the transition to university may be stressful. Experiencing elevated levels of stress has been linked to physical and psychological symptoms (Straub, 2002). However, in general, major life events only weakly correlate with stress-related outcomes (Kohn, 1996). In contrast, what seems to demonstrate a greater association with stress-related outcomes are the daily hassles, (i.e., the relatively minor, ordinary stressors and irritants) we experience from day to day (Kohn, Lafreniere & Gurevich, 1990). When the impact of major life events on well-being was compared to the impact of daily hassles on well-being, the more important determinant of well-being was the daily hassles (Eckenrode, 1984). That is, life events and chronic stress had indirect effects on the daily psychological well-being that was mediated by hassles and physical symptoms (Eckenrode, 1984). Thus, life events do not predict subsequent distress to as large of an extent as do daily hassles (Kanner, Coyne, Schaefer, & Lazarus, 1981). In the present study, hassle-based stress was measured by assessing the level of daily hassles students were experiencing using a measure that was designed specifically to assess college related daily hassle based stress.

1.1 Individual Factors that Affect the Transition to University

Many individual demographic and background variables influence the nature of the transition to university. Accordingly, in the present study I examined a range of individual background and demographic factors. To begin, it appears that the transition to university may affect men and women differently with women experiencing more difficulty (Fisher & Hood, 1987; Gall, Evans, & Bellerose, 2000), although it should be noted that not all studies have found gender differences (e.g., Halamandaris & Power, 1997). In the present study all focal variables were tested for gender differences in order to investigate the possibility that women have more trouble with the university transition.

Entering university presumably increases the academic demands experienced by students. Academic attainment (Grade Point Average) is related to adjustment in university (Gerdes & Mallinckrodt 1994) and poor first semester grade point averages have been shown to predict subsequent attrition (Edwards & Waters, 1983). Thus, in the present study, students were asked to report the average grade they had received during the current semester.

As presented earlier, moving away from home is a part of the transition to university for many students and being away from home has been related to poorer mental and physical health (Fisher & Hood, 1988). When a student moves away from their home to attend university, they have less opportunity to interact with their traditional support system and need to form new friendships for support (Paul & Brier, 2001). During the network transition (first 2 months of first year), many students reported feeling concerned about the loss of their pre-college friendships and preoccupation with pre-college friendships was related to poorer adjustment (Paul & Brier, 2001). Loneliness in college students who had moved to attend school has been found to increase during the fall and return to pre-college levels by the spring of first year (Duck, S. 1985). Of interest in the present study, was whether students living at home would adjust differently to university as compared to students who had moved away from home in order to attend school.

1.2 *Risk and Protective Factors*

In addition to background and demographic variables there are a number of psychosocial factors and lifestyle behaviours that may be related to a student's ability to adapt to university. For instance; coping, social support, self-esteem, and health related behaviours, are all related to one's level of adjustment in university (Hudd et al. 2000; Kohn, & Veres, 2001; Lamothe et al., 1995). Specifically, adaptive coping, adequate social support, high self-esteem, and health enhancing behaviours may help students to succeed across multiple domains during the university transition (Bray & Kwan, 2006; Hudd et al. 2000; Kohn, & Veres, 2001; Lamothe et al., 1995). By increasing an individual's ability to deal with a diverse array of stressors, such factors may contribute to an individual's adjustment. Accordingly, these psychosocial constructs and lifestyle behaviours can be conceptualized as risk and protective factors and were of interest in the present study. A conceptual model of the hypothesized relations between variables follows in Figure 1.

Research on protective factors shows that people are better off when they have more protective factors, and outcomes improve when an intervention is designed to increase the number of protective factors an individual possesses (Search Institute, 2004). Researchers at the Search Institute (2004) have identified 40 protective factors which include both external factors such as family support, positive peer influences, and high expectations from parents and teachers as well as internal factors such as school engagement, high personal restraint from risky behaviours and high self esteem (Search Institute, 2007). Although not explicitly investigating school transition, researchers from the Search Institute have suggested that having more developmental assets is related to having better outcomes such as exhibiting leadership, maintaining good health, valuing diversity, and succeeding in school. Students who have more developmental assets are also less likely to exhibit poor outcomes including problematic alcohol use, involvement with violence, illicit drug use, and risky sexual activities (Search Institute, 2004). Students tend to develop more risk behaviours over time if they are initially characterized as having more risk factors and fewer protective factors (Zweig, Phillips, &

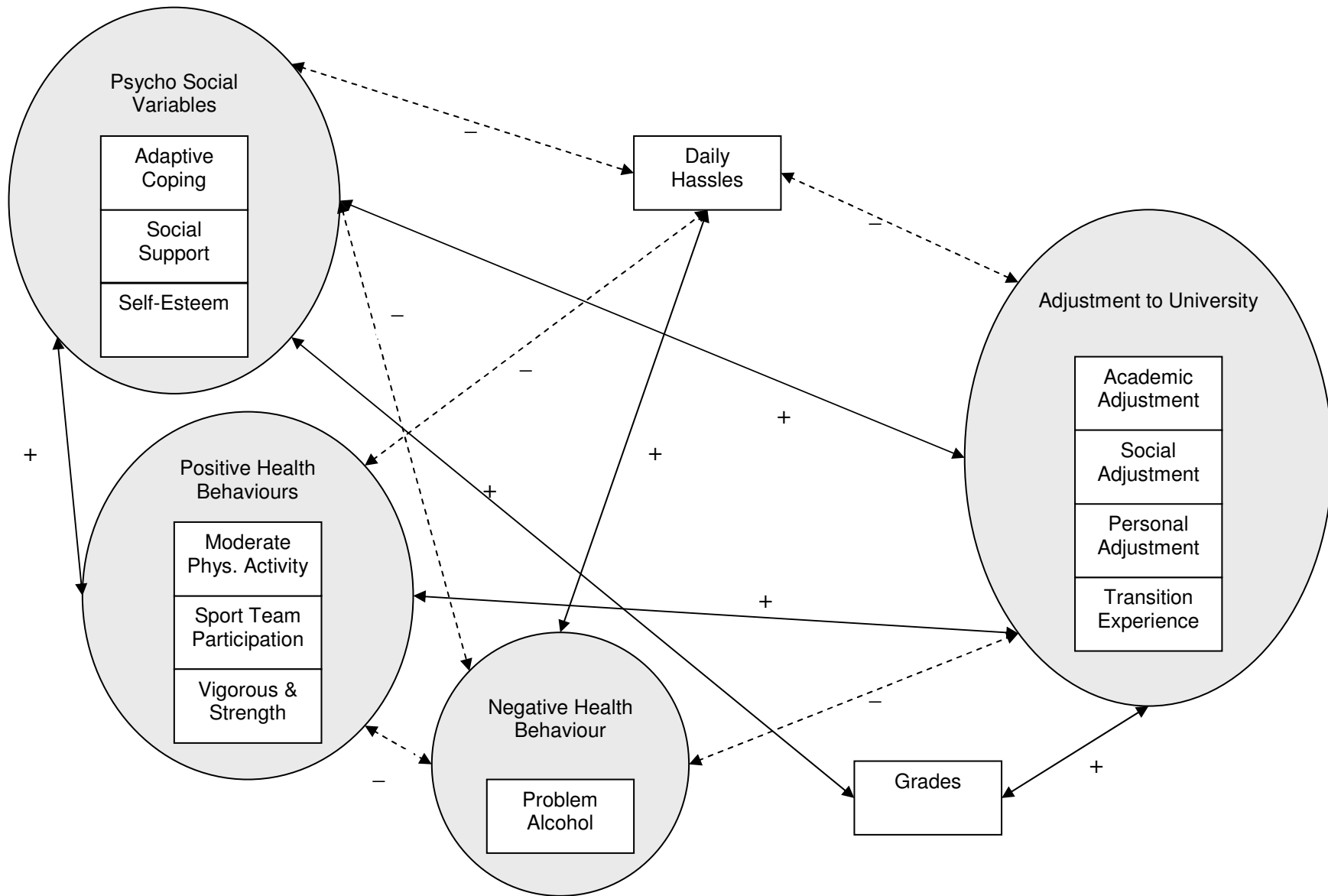


Figure. 1 Conceptual map of hypothesized relationships of risk and protective factors and outcomes

Duberstein Lindberg, 2002). The opposite is also true; individuals who start with more protective factors tend to develop more assets over time (Zweig et al. 2002). Although it is not always the case, risk and protective factors commonly exist on a continuum such that while the presence of the variable acts as a protective factor, the absence of that same variable constitutes a risk or vice versa (Masten, et al. 1999). The protective and risk factors under investigation in the present study exhibit this type of continuum property. Psycho-social factors in the present study included adaptive coping, social support, and self-esteem. The lifestyle or health-related behaviours under study were physical activity and problematic alcohol consumption.

Smith, Orleans, and Jenkins (2004) call for research that integrates behavioural and psychosocial risk and resilience concepts. They state that an understanding of the relation between behavioural risks (for example; smoking, poor diet, lack of exercise, risky drinking) and psychosocial risks (for example; social isolation, interpersonal stress/conflict, certain personality traits, depression) from a developmental perspective is important. Both groups of risks are related to future morbidity and early mortality, and both develop during adolescence and early adulthood. Furthermore, there seems to be some shared underlying factors in the development of both types of risk (Smith, Orleans & Jenkins 2004). Risk and protective variables are related to future mortality and morbidity of university students, and these same variables may have implications for current adjustment to university. Currently there is very little literature that looks at how health behaviours (physical activity and alcohol consumption) are related to psychosocial behaviours (adaptive coping, social support and self-esteem) during transition to university, and I am not aware of any published studies that investigate these relations longitudinally during first year. Consequently, the relations among the psychosocial and health related variables were of interest in the present study.

1.2.1 Adaptive Coping. Coping is a process that an individual initiates in order to deal with challenging situations (Boekaerts, 1996). The process is multistage and begins with the presence of a stressor. The stressor is identified and appraised by the individual who initiates a response in an attempt to meet some goal (Zeidner & Saklofske, 1996). Individuals differ with respect to their coping abilities, and achieve varied results. An individual may achieve a variety of outcomes ranging from maladjustment to being well adjusted (Hewitt & Flett, 1996). Strategies for dealing with stressors are most effective

when an individual is comfortable with the strategy, and it is in line with their personal objectives (Zeidner & Saklofske, 1996).

Traditionally coping has been measured in terms of different styles. A coping style is a pattern of coping behaviour regularly utilized by an individual. Coping is generally studied as a response to stress that occurs in the form of a permanent style (Endler & Parker, 1990). Despite criticisms to the contrary (Lazarus & Folkman, 1987), there is evidence in support of stable styles of coping (Endler & Parker, 1990). There are three general styles of coping including problem-focused, emotion-focused, and avoidant coping (Boekaerts, 1996). Problem-focused coping deals directly with the stressor, for example studying for an upcoming test to reduce the stress of writing the test is a problem-focused coping behaviour. Emotion-focused coping is used to regulate ones' emotions associated with a stressor. Talking about the anxiety one may be feeling about an upcoming test with friends is an example of an emotion focused coping behaviour. Problem-focused coping, also commonly referred to as active coping, has generally been linked to positive outcomes. A positive outcome is attained particularly when the stressor is under the control of the individual. An emotion-focused coping style is often related to less positive outcomes, although this finding is not universal (Baum, Fleming & Singer, 1983). An emotion-focused or passive coping strategy is generally used in situations where the individual has identified the stressor as being of an uncontrollable type (Zeidner & Saklofske, 1996). The third category is composed of avoidant coping behaviors which typically involve disengaging from a situation. Avoidance coping mechanisms are utilized when the individual creates either cognitive or physical distance from their stressor. For example, avoidant coping behaviour is displayed when a student chooses to go out with friends to play their favorite sport to avoid thinking about a stressful upcoming test. Avoidant coping is not in and of itself maladaptive. Gall et al. (2000) found that new university students tended to increase their use of avoidant coping techniques temporarily at the beginning of the year and that these behaviours did not appear to be detrimental for the students. However, depression in university students has been shown to relate to both avoidance and emotion-focused coping styles (Zeidner, 1994; as cited in Zeidner & Saklofske, 1996).

Adaptation to stressful situations is achieved through the process of coping. It has been suggested that the transition to university is a stressful time that requires individuals

to initiate coping responses (Fisher, & Hood, 1987; Matheny, Curlette, Aysan, Herrington, Gfroerer, et al., 2002). Students attempt to adjust to their new situation, but they vary in their ability to deal with the stress associated with this transition (Matheny et al., 2002).

Although the transition to university is a situation that may be associated with a number of stressors that require adaptation through coping, it is very likely that some students will identify the transition situation as challenging whereas others will perceive it to be threatening (Straub, 2002). How an individual perceives a stressor affects the type of coping mechanisms they will enact (Zeidner & Saklofske, 1996). Although most people experience stress, some people appear to be better at dealing with and reducing stress through effective coping. Matheny et al. (2002) found that having more coping resources was related to lower levels of stress and also more life satisfaction. They found that coping promoted life satisfaction in part through indirect effects; more coping resources reduced perceived stress. In turn, a reduction in perceived stress was related to greater life satisfaction in university students. In addition to simply having more coping resources, being able to cope adaptively (using coping strategies that are well suited to the situation) has been related to better adjustment in university both through direct and indirect effects. Adaptive coping is positively related to personal and academic adjustment to university. In addition, coping affects adjustment indirectly by lowering daily hassles. Given that high levels of hassles are related to poor academic and personal adjustment it follows that at least some of the connection between adaptive coping and adjustment to university is achieved through a reduction of hassle-based stress (Kohn & Veres, 2001).

Although complete agreement does not exist as to what constitutes an effective coping response, Zeidner and Saklofske (1996) have outlined a number of criteria that are accepted by many researchers and describe adaptive outcomes that result from coping. Coping can be identified as effective when: (1) it provides a solution to the stressor, (2) it reduces physical arousal, (3) it reduces emotional distress, (4) it is normal within the social context, (5) it allows an individual to return to routine activities, (6) it aids the well-being of self and others, (7) it produces good self esteem, and (8) it is perceived by the individual to have helped. To be effective, coping does not need to satisfy all of the above criteria. A particular behaviour is best evaluated in terms of its outcome within a specific context. For example, problem-focused coping is generally related to more positive outcomes, however, if a child was witnessing a violent disagreement between his/her parents,

problem-focused coping might entail becoming involved and resolving the disagreement (realistically, the child can not resolve this problem). In this situation for this child, problem-focused coping is not going to be as effective a coping strategy as emotion-focused coping (i.e., dealing with their feelings about his/her parents fight), or avoidance coping which would entail removing themselves from the situation and focusing their attention on something else. Though coping with stressors should explain much of the variance observed in the outcome of stressful events, for the most part this has *not* been empirically demonstrated (Kohn, 1996). The reason that coping has not explained much of the variance in outcomes in past studies is likely due to the way it has been conceptualized and measured in the past. Researchers have tended to conceptualize and measure coping according to style (e.g., problem-focused, emotion-focused, or avoidant) rather than by its adaptiveness (Kohn, 1996).

Adaptive coping entails responding to a stressful situation in an appropriate manner. Kohn (1996) explains that the controllability of the stressor is the central determinant of which behaviour may constitute an appropriate response. Effective coping is not necessarily achieved by relying on only one coping style (i.e., problem-focused or emotion-focused), but on the context in which a particular coping technique is used. Even though problem-focused coping is usually an effective style of coping, if the situation is actually uncontrollable, enacting problem focused coping behaviours may become frustrating rather than beneficial. Being able to adaptively cope, means being able to use whatever type of coping will actually work best within a given situation. The factors that constitute adaptive coping can be conceptualized as self-control, determination, and judgment (Kohn, 1996). Self-control refers to one's ability to control one's behaviour despite impulse to the contrary. It is the ability to respond passively to a stressor if the situation is best dealt with by doing so. Determination is one's ability to actively respond to a stressor and execute the necessary behaviour. Judgment refers to an individual's ability to decide on the best response for a given situation. Every situation is characterized by many alternate reactions ranging from maladaptive to very adaptive. The adaptive quality of most coping responses is dependent on the circumstance (Kohn, 1996).

Coping with daily hassles concerns everyday situations, and generally involves dealing with the cumulative impact of daily stress (Kohn, 1996). Like major life events, how we appraise hassles affects our response. When coping is only measured in terms of

style, rather than by its adaptiveness, coping explains very little of the variance (with regard to affects on mental health, subjective distress, and minor physical ailments) not explained by exposure to hassles alone (Kohn, Hay & Legere, 1994; Lu, 1991).

Coping adaptiveness works to decrease reported hassles as well as increase the student's academic, social, and personal/emotional adjustment. Increased daily hassles are inversely related to both academic and personal adjustment (Kohn & Veres, 2001). Generally, coping assumes effectiveness: to adaptively cope means to be effective in achieving positive adjustment in the long term (Zeidner & Saklofske, 1996). In this way one's adaptive coping ability is related to an individual's adjustment level during a stressful transition. The role of adaptive coping was of central interest in the present investigation. It was hypothesized that coping adaptiveness would be positively related to measures of university adjustment (academic, social and personal/emotional adjustment) as well as perceived transition experience and psychosocial and health related variables.

1.2.2 Social Support. In addition to adaptive coping, an individual's level of social support also plays a role in their adjustment during the transition to university. In particular, the absence of social support is a risk factor for poor adjustment (Lamothe et al., 1995), whereas the presence of adequate social support appears to buffer people from the effects of stress (Cutrona, & Russell, 1987).

During the transition to university, some students have moved away from their traditional support system. Many students have to create new social support networks (Shaver, Furman, & Buhrmester, 1985). Forming a stable social support network can be both difficult and stressful. Students enter a new environment and must quickly form a new social network away from their family. For students who are unable to build their social network, loneliness may result (Paul & Brier, 2001). University is both an unfamiliar social setting and an evaluative social setting. As students are evaluated intellectually by educators, they are also being socially evaluated by their peers. This situation can elicit feelings of shyness and can be problematic for socially inhibited individuals (Asendorph, 2000). Fisher and Hood (1988) found that almost one third of the first year university students they surveyed reported feeling homesick. In addition to changing relationships with family, some students suffer from friend-sickness during the transition to university. According to Paul and Brier (2001) friend-sickness is a preoccupation and concern with a loss of friends or changes in pre-college friendships. Paul and Brier found that friend-sick

college students were lonelier and had lower self-esteem regarding their ability to make friends and to secure close accepting friendships than students who did not report feeling friend-sick. Clearly students experience distress when they are unable to make new contacts that they can utilize for needed support. Paul and Brier (2001) reported that approximately half of their student sample experienced moderate to high levels of friend-sickness, and high levels of friend-sickness were related to poor adjustment.

In their social support intervention study, Lamothe et al. (1995) found that university students who participated in an intervention that was designed to increase new social ties and help students to balance academics and social demands showed more gains in social support. Higher levels of social support were related to better university adjustment. University adjustment in their study was measured utilizing all four subscales of the Student Adaptation to College Questionnaire including academic, social, and personal/emotional adjustment, as well as school attachment (Baker & Siryk, 1984). A replication study again demonstrated the importance of social support in terms of better adjustment, and also revealed that students with better social support and higher adjustment levels did not skip class or engage in smoking tobacco as much as those in the control group who had not received help increasing their social support (Pratt et al., 2000). Taken together, the evidence suggests that whereas a lack of social support constitutes a risk factor for poor adjustment in university, adequate social support serves to protect students and is related to better adjustment. Following from previous research I sought to examine whether low levels of social support were related to poor adjustment in the first year of university, or conversely, whether high levels of social support would go hand in hand with better adjustment. Previous work suggests that social support may buffer people from the negative effects of stress (Cutrona & Russel, 1987), In the present study, I was interested in investigating whether daily hassles would mediate the relation between social support and adjustment to university; such that while social support and university adjustment would share a positive relation, some of the positive influence that social support has on adjustment would be attained through a reduction in hassle-based stress.

1.2.3 Self-Esteem. One's sense of self is related to individual adjustment such that having high self-esteem has been shown to be positively related to adjustment in a variety of contexts (Robins, Hendin, & Trzesniewski, 2001). Global self-esteem is related to both psychological well being and academic competence (Gray-Little, Williams &

Hancock, 1997). Individuals with high self-esteem are less likely to be depressed (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995). In addition, in university students, high self esteem is related to academic achievement (Aspinwall & Taylor, 1992) and is predictive of better adjustment to university during first year (Mooney, Sherman, & lo Presto, 1991). Accordingly, the relations between self-esteem and the university adjustment indices were examined in the present study.

1.2.4 Health behaviours. During adolescence and young adulthood many lifestyle behaviours that are related to an individual's adjustment emerge and are solidified (Jessor, Turbin & Costa, 1998). The development of health risk and protective behaviours is extremely important to study because in industrialized nations lifestyle factors have become the leading determinants of morbidity and mortality later on in adulthood (Jessor, Turbin & Costa, 1998; Smith et al., 2004). The behaviours that are developed during adolescence and young adulthood have costs or benefits both for individuals and society (Smith et al., 2004; Williams, Holmbeck, & Greenley, 2002). For example, a person who smokes and rarely exercises is much more likely to develop heart disease than is someone who leads a heart healthy life style. In 1997, 26.6 % of all deaths in Canada were attributed to heart disease (Statistics Canada, 1997). It can be argued that much future individual suffering could be avoided by developing health enhancing lifestyles. In addition, society could benefit through a reduction of the financial costs associated with the treatment of lifestyle related diseases (Straub, 2002).

The transition to university appears to bring with it a number of changes in students' health behaviours. For example, it has been reported that students drink more alcohol, eat more poorly, and exercise less upon entering college (Lau, Quadrel, & Harman, 1990). Despite the fact that stress is related to physical illness (Evans & Edgerton, 1990), exercise has been shown to protect individuals from succumbing to stress related illnesses (Straub, 2002). Also, individuals who lead a physically active lifestyle are less likely to suffer from depression and anxiety as compared to those who do not exercise regularly (Callaghan, 2004; Statistics Canada, 1999). Indeed, depressive symptoms in college students have been reduced through programs of aerobic exercise (McCann & Holmes, 1984). Aerobic exercise can also help depressed persons to maintain their improvement in symptomology. In one study, participants who were treated with aerobic exercise remained less depressed after 3 months while participants treated with psychotherapy had

began to become more depressed again (Hinkle, 1992). Hudd et al. (2000) conducted a study of students living on a university campus and showed that exercise was related to reported stress. They found that the majority of students who did not participate in sports regularly reported high levels of stress, whereas over one third of the group who reported low levels of stress were engaged in frequent physical activity. In addition physical activity shares connections with university adjustment and achievement. Strength training has been shown to be positively related to academic average (Trockel, Barnes, & Egget, 2000) while life satisfaction in university was positively related to satisfaction with relationships, and physical health (Chow, 2005).

Alcohol misuse in college populations is related to a wide variety of negative consequences including academic impairment, injuries, and illness (Perkins, 2002). A number of explanations for patterns of high frequency and quantities of alcohol consumption have been investigated, including social reasons and coping reasons (Labouvie & Bates, 2002; Perkins, 1999). Labouvie and Bates (2002) demonstrated that while some young adults were motivated to drink for social reasons (e.g., to fit in with friends), some drank for stress suppression effects (e.g., to escape school pressures). When young adults demonstrated drinking to cope with situations that they appraised as stressful and drinking in anticipation of stress, their alcohol use intensity was elevated, as were their alcohol related problems (Labouvie & Bates, 2002). In college, higher levels of alcohol consumption are related to school problems (Wechsler, Dowdall, Maenner, Gledhill-Hoyt, & Hang, 1998) and lower academic achievement (Engs, Diebold, & Hanson, 1996). In one longitudinal study of freshman drinking, frequent binge drinking was related to more alcohol-related problems in college, academic attrition, less favorable labor market outcomes and was a risk factor for alcohol dependence 10 years later (Jennison, 2004).

Of interest in the present examination was whether positive (physical activity) and negative (problematic alcohol consumption) health behaviours would serve as protective and risk factors (respectively) across the transition to university. Consistent with previous research, it was hypothesized that health behaviours would be related to adjustment to university. In addition, it was hypothesized that health behaviours would be related to hassle based stress such that more physical activity and less alcohol consumption would be related to lower levels of stress.

1.3 The Present Study

In the present study, adjustment during the university transition was conceptualized in two ways. First, students' adjustment to university was examined at the level of individual functioning in the domains of academic, social, and personal/ emotional adjustment. In this first instance, the concept of adjustment refers to self-reports of student experiences within both academic and non-academic realms of college life (SACQ: Baker, McNeil & Siryk, 1985). Second, students were asked to comment directly on the nature of their transition experience (e.g., hard/easy, positive/negative). The transition experience was measured using questions that required the students to directly assess their own transition experience. By asking students directly about the nature of their transition experience it is possible to avoid the assumption that the university transition is an inherently stressful experience for all and focus attention on the individual's perception of this experience. School transitions may be very stressful or very easy depending on the individual and their personal resources (McDougall & Hymel, 1998).

The primary goal of the present study was to investigate the relations between psychosocial factors (adaptive coping, social support, and self-esteem), health behaviours (alcohol consumption, and physical activity) and adjustment during transition. Adopting an individual difference perspective, I explored whether the experience of moving into the first-year of university (Time 1) varied for men and women and varied as a function of whether students were living at home or away from home. Based on what little research exists, it was predicted that the transition would be more difficult for women and students who had moved away from home. Self-reported grade point average is often collected as an outcome in school transition studies, as promotion is based on attaining grades that meet preset requirements. Based on previous literature, it was hypothesized that self-reported grade point average would be related to better transition experiences, and adjustment to university. Academic adjustment and self-reported grades in particular were expected to be closely related to one another.

In an attempt to further understand how health behaviours and psychosocial variables are related, changes in risk and protective factors were examined over two time points across the first year (November-first semester and March-second semester) in a smaller sub-sample of the women (all women who completed the questionnaire at both data collections). By utilizing a short-term longitudinal design it was possible to explore

changes in these risk and protective factors during a potentially stressful period while at the same time examining individual variation in transition experience and university adjustment in first year.

The primary focus of the present study was the examination of relations (both concurrent and longitudinal) between hassles, coping adaptiveness, social support, self-esteem, physical activity, problem alcohol consumption, and adjustment to university (perceived transition experience along with academic, social, and personal/emotional adjustment to university). Consistent with existing literature, I expected that coping adaptiveness would be related to a decrease in reported hassles and more positive transition experiences as well as being associated with positive adjustment in academic, social, and personal/emotional realms. In addition, adaptive copers were expected to have higher levels of social support and engage in more physical activity, and less problem drinking.

Consistent with previous research, better social support was predicted to be associated with more positive perceptions of the transition experience as well as better academic, social and personal/emotional adjustment. In contrast, higher levels of daily hassles were expected to be tied to lower academic, social, and personal/emotional adjustment and predictive of a more challenging transition experience as well as less physical activity and more problem drinking. More positive health behaviours (more physical activity and less problem drinking) were expected to be related to more positive transition experiences and higher levels of university adjustment (academic, social, and personal/emotional). Finally, high self-esteem was expected to be positively related to higher grades and each of the three indices of university adjustment.

In the present study I hypothesized that while some variables (coping, social support, health behaviours) would share a direct relation with adjustment to university, part of this relation would be indirect, mediated through daily hassles. Specifically, three mediational hypotheses were explored. First, based on previous research (Kohn 1996; Kohn & Veres, 2001) I examined whether the relation between adaptive coping and adjustment to university would be partially mediated by daily hassles exposure. Second, based on relations identified in the literature (Cutrona & Russel 1982) I expected the relation between social support and adjustment to university to be partially mediated by daily hassles. Third, I considered whether the relation between physical activity and

adjustment to university would be mediated by daily hassles. See Figure 2 for a conceptual map of the proposed mediational relations.

As a final consideration, I investigated the question of whether changes in risk and protective factors across the first year of university would be related to adjustment at the end of the school year. For example, it has been reported that health related behaviours such as healthy exercise and eating habits decline during the first year of university (Hudd et al., 2000). In another study of physical activity during the transition to university, it was found that decreased vigorous physical activity was related to fatigue and lower levels of vigor (Bray & Born, 2004). Of interest was whether a decline in protective factors (e.g., moderate physical activity) or an increase in risk behaviours (e.g., greater alcohol consumption) over the course of first year would be associated with greater difficulty or poorer adjustment to university.

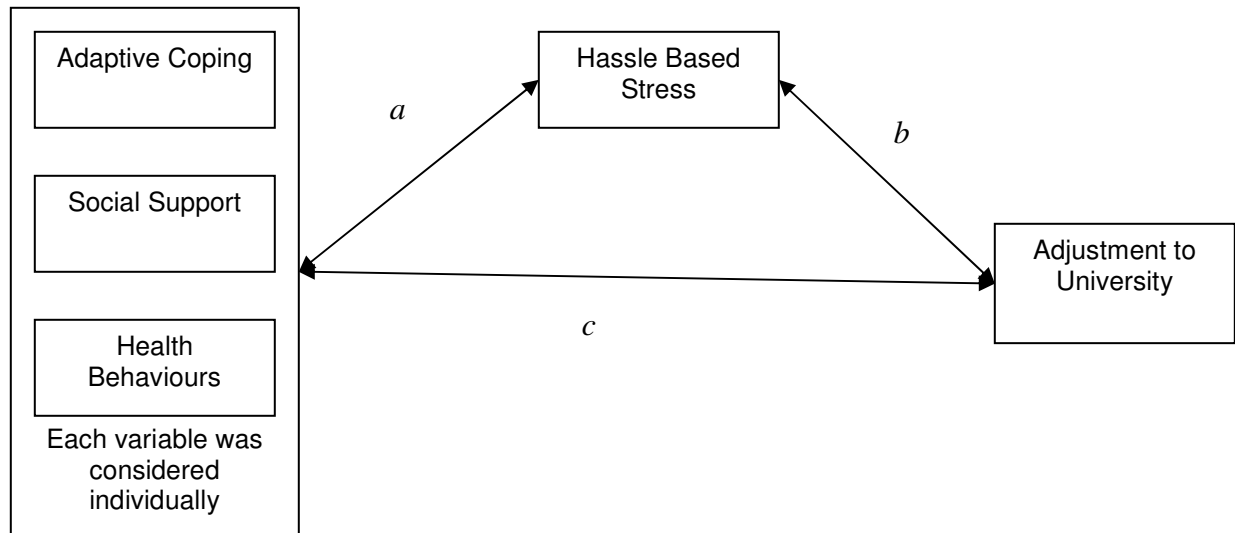


Figure. 2 Hypothesized mediational relations involved in the prediction of adjustment to university.

2. Methods

2.1 Participants

The participants (Time 1 $N = 229$, Time 2 $N = 73$) consisted of University of Saskatchewan undergraduate students (age, $M = 18.46$, $SD = 1$). The students were recruited to participate in this study through the undergraduate psychology participant pool and via recruitment posters placed in the residence buildings and on message boards on campus. Students who were recruited through the undergraduate participant pool received bonus points toward their first year psychology course. For first year student not enrolled in psychology, the incentive to participate in the study was a chance to win one of three \$100 gift certificates to the campus book store or to Future Shop. At Time 1 (November of first semester) there were 50 men and 179 women and at Time 2 (March of second semester) there were 7 men and 66 women.

2.2 Measures

Each questionnaire contained demographic and background questions along with measures of risk and protective factors (i.e., coping, daily hassles, social support, self-esteem, physical activity and problematic alcohol consumption) along with indices of adaptation to the university setting (i.e., beliefs about the transition experience and adjustment to university). Students filled out the questionnaire online. Each of the measures is described below.

2.2.1 Background/Demographic Variables. The demographic questions (See Appendix A) consisted of items regarding age, gender, self-reported grade history, the student's living arrangement at the time, and how far (driving time) their home town is from the university.

2.2.2 Coping. The Personal Functioning Inventory (PFI) is a 30-item scale used to measure coping adaptiveness. This scale consists of 15 pro-trait and 15 anti-trait questions that are responded to on a 5-point Likert scale ranging from "1" Strongly Disagree to "5" Strongly Agree (see Appendix B). A pro-trait item is one that explains an adaptive quality whereas an anti-trait item describes a response that is not adaptive. The PFI is not time referenced as it reflects an individual's habitual reaction to various stressors. High scores are indicative of higher levels of coping adaptiveness. The mean for the full scale was used where scores could range from 1 to 5. Kohn et al. (2003) have

investigated the psychometric properties of the PFI and found the measure to be reliable and valid. The stability of the PFI was established by administering the measure twice over a three week period, the test-retest reliability was reported as 0.90 (Kohn et al. 2003). The construct validity was established by correlating the PFI with the Summed Self-Rating for Adaptiveness designed to measure adaptiveness, judgment, determination and self-control. The PFI shows a strong positive correlation with this measure. The PFI also has a strong positive relation with an individual's confidence in their ability to cope with stressful situations. In addition, the PFI correlates moderately with an individual's need for social approval, and shares a strong negative relation with perceived stress and prolonged state anxiety. As evidence of discriminant validity, the PFI shows no correlation with abstract curiosity, a construct seen as unrelated to adaptiveness (Kohn et al. 2003). The internal consistency is high, alpha reliabilities have been found to range from 0.86 to 0.92 in university student and adult populations (Kohn et al. 2003).

2.2.3 Daily Hassles. The Inventory of College Students' Recent Life Experiences (ICSRLE) has 49 items and is used to measure daily hassles exposure (Appendix C). The ICSRLE is a self-report measure where responses are recorded on a 4-point scale indicating how much each item has been a part of the participants' life ("1" = not at all a part of my life to "4" = very much a part of my life). Respondents are asked to consider the events over the past month when completing each item. The mean score for the full scale was used where scores could range from 1 to 4. Higher scores on the ICSRLE indicate more daily hassles. Kohn et al. (1990) have tested this scale and found it to be reliable and valid. The alpha reliability was reported as 0.89. The ICSRLE correlates positively with the Perceived Stress Scale (PSS) developed by Cohen et al. (1983) showing that the construct being measured is related to stress. The reliability and validity of the ICSRLE holds across gender (Kohn et al. 1990). Osman et al. (1994) have also tested the ICSRLE and found the alpha reliability to be satisfactory. In addition, the concurrent validity was established by correlating the ICSRLE with another commonly used hassles measure, the Daily Hassles Scale (Revised) by Holm and Holroyd (1992). Strong positive correlations were reported (Osman et al. 1994).

2.2.4 Social Support. The Social Provisions Scale (SPS) is a 24-item self-report measure designed to assess social support. Responses are recorded on a 4-point scale describing the degree to which the respondent agrees with each item ("1" = Strongly

Disagree to “4” = Strongly Agree). The SPS is time referenced to the present such that participants are asked to think about their current relationships while answering each question. The scale is divided into six subscales, each representing one of six social provisions. These provisions include: Guidance (e.g., the extent to which the respondent receives advice), Reassurance of Worth (e.g., whether a person feels valued by others and recognized for their contributions), Social Integration (e.g., one’s feelings of belonging to a social group.), Attachment (e.g., the presence of emotional closeness with someone), Nurturance (e.g., whether the individual is able to provide support to someone else), and Reliable Alliance (e.g., has others that they can count on for assistance). There are four items, two positively and two negatively worded questions on each subscale. High scores indicate that the individual receives that particular provision (Cutrona & Russell, 1987).

The total scale score was employed in the present investigation to reflect overall level of social support (summing across all provisions; 24 items). The mean score for the full scale was used where scores could range from 1 to 4. The total scale score has previously been observed to yield a reliability of .915 (Cutrona & Russell, 1987). The construct validity of the SPS has been demonstrated through its relation with measures of loneliness and interpersonal relationships (Cutrona & Russell, 1987).

Please note: Access to the SPS is restricted by Cutrona and Russell. Scale items do not appear in an appendix as per my understanding of my agreement with them. A copy of the Social Provisions Scale along with a paper presenting psychometric data for the measure can be obtained by sending an e-mail message to drussell@iastate.edu.

2.2.5 Self-Esteem. The Rosenberg measure of self-esteem (Rosenberg 1979) is a 10-item scale that has been constructed to measure global self esteem (Appendix D). This scale was designed to assess general feelings of self-acceptance. Achieving a high level of face validity was regarded as important during the development of the scale. As a result the questions ask directly about how one feels about themselves. The items are presented in an alternating pattern between positively worded questions and negatively worded questions. Responses are recorded on a 4-point scale describing the degree to which the respondent agrees with each item (“1” = Strongly Disagree to “4” = Strongly Agree). The mean score for the full scale was used where scores could range from 1 to 4. The validity and reliability of this scale have been tested many times and have been found

to be satisfactory (Gray-Little, Williams, & Hancock, 1997). In one such study, reliability coefficients were found to range from .88 to .90 (Robins et al., 2001).

2.2.6 Problematic Alcohol Consumption. The Alcohol Use Disorders Identification Test (AUDIT) is a measure designed to detect early indicators of harmful alcohol consumption (Appendix E). Specifically, the behaviours measured by the AUDIT characterize individuals who are not serious problem drinkers but who are engaging in drinking behaviours that may lead to physical problems and injuries in the future. The AUDIT is the product of a collaborative project developed by the World Health Organization (WHO). The instrument was tested in a pool of approximately 1,800 people. Among the individuals in this pool who have been diagnosed as hazardous or harmful alcohol users, 92% scored an 8 or higher on the AUDIT. In addition, 94% of the individuals who were assessed as having non-hazardous alcohol consumption patterns scored 8 or less (Saunders, Aasland, Babor, De-la-Fuente et.al, 1993). The AUDIT questionnaire consists of 10 questions. Questions 1 to 8 receive scores from 0 to 4 where the verbal descriptors attached to each numeral vary across questions. Questions 9 and 10 receive scores of 0, 2 or 4 depending on the answer selected. The score of each question is then totaled for the full scale score. Full scale scores range from 0 to 40 with a suggested cut off score of 8 as the marker for hazardous or harmful drinking. Higher scores reflect more problematic alcohol consumption.

2.2.7 Physical Activity. The National College Health Risk Behavior Survey (NCHRBBS-physical activity questions) is a self-report questionnaire designed to measure the type and frequency of physical activity (Appendix E). The types of activity that are assessed include vigorous physical activity, strength building physical activity, moderately intense physical activity, sedentary behaviors, and sports team participation (Centers for Disease Control and Prevention, 2004). The four questions used each ask about the frequency of the physical activity or behavior. Each type of physical activity or behaviour is related to a person's general activity level. Scores can range between 0 and 7 bouts of exercise (1 per day) per week. Higher scores on the first three questions (moderate physical activity, strength building activity, and vigorous physical activity) reflect more frequent bouts of activity. Higher scores on the last question indicate that an individual is a member of more sports teams. In the present investigation a distinction was made between moderate physical activity (activities that are usually worked into daily life) and

exercise (purposeful physical activity done with the intent to exercise). To this end, a composite variable was created to reflect 'exercise' by combining vigorous physical activity and strength building activity. Theoretically, a participant's score could range from 0 to 14 bouts of exercise in per week. Responses to the moderate physical activity and sports team participation questions were considered as two additional variables.

2.2.8 Beliefs about the transition experience. A direct assessment of the university transition experience was obtained using five questions designed to measure the quality of the transition (see Appendix F). This questionnaire consists of a four item measure of school transition experience taken from McDougall and Hymel (1998) with the addition of one extra question that was added for the purpose of the current study. Specifically, the five questions measured student perceptions of the transition experience in the following areas: (1) extent of stress (2) feelings of success, (3) level of difficulty, and (4) extent of happiness as well as the added question regarding (5) degree of challenge. Each item is measured on a five-point scale. A mean score is obtained by averaging items together with higher scores reflecting a better transition experience (i.e., less difficulty). Scores could range from 1 to 5. Internal consistency was observed to be .60, and was viewed to be acceptable for research purposes (McDougall & Hymel, 1998).

2.2.9 University adaptation. The Student Adjustment to College Questionnaire (SACQ) was used to measure each participant's relative adjustment to University (Appendix G). Baker and Siryk (1984) contend that the SACQ is a reliable and valid indicator of an individual's actual adjustment to college. Respondents were asked to consider the "past couple of days" as they completed 67 items that reflect various facets of adjustment. Responses are provided on a 9-point scale indicating the degree to which an item applies to the respondent ("1" = Applies very closely to me to "9" = Doesn't apply to me at all). The full-scale score represents overall adjustment to college with higher scores reflecting better adjustment. The alpha reliability estimates for the full-scale score range between 0.91 and 0.95 (Baker, Siryk, & McNeil, 1985; Baker & Siryk, 1986).

Baker and Siryk (1986) have reported that the SACQ contains four subscales measuring domains of academic, social, personal/emotional, and attachment/commitment adjustment. The academic (SACQ-A) scale has 24 items thought to address educational demands. The alpha reliability for the SACQ-A has been reported as 0.82 and 0.88. The social scale (SACQ-S) consists of 20 items and measures adjustment to interpersonal and

societal demands. The alpha reliability of the SACQ-S has been observed to range from 0.88 and 0.91. The personal/emotional (SACQ-P) scale consists of 15 items and is an indicator of how the student feels both psychologically and physically. The alpha reliability for the SACQ-P has been observed to range from 0.79 to 0.85. The Academic, Social and Personal/Emotional subscales of the SACQ each contain an independent set of items with no overlap across subscales. The final scale concerning goal attachment and commitment consists of 16 items where 9 items overlap with other scales (Baker et al., 1985; Baker & Siryk, 1986). The goal attachment and commitment subscale was not considered in the present investigation.

Although the three subscales (social, academic, personal/emotional) were of primary consideration in the analyses, the full scale score on the SACQ (reflecting overall adjustment) was used to test mediational hypotheses in the current study. The full scale score was computed by averaging of all 67 items. The score for each scale could theoretically range from 1 to 9 where higher scores are indicative of better adjustment.

Baker and Siryk (1986) demonstrated the validity of the SACQ through its relation with other indicators of adjustment to college. The SACQ was negatively correlated with dropout rates in college. Students who reported low scores on the SACQ had higher dropout rates than did students with higher scores, indicating that better adjustment was related to completing school. In addition, adjustment scores on the SACQ were related positively with grade point average, election to academic honour societies, involvement in social activities, and holding dormitory assistant positions, and negatively related to psychological clinic use (Baker et al., 1985; Baker & Siryk, 1986). See Figure 3 for a conceptual map that shows the scales used to measure the constructs.

2.3 Procedure

Students gave consent and filled out the questionnaire on-line. Leading up to the second wave of data collection students were contacted via email and asked to take part in second part of the study. Students were assigned ID numbers by the SONA system (online data collection service provider) at both data collection time points. Each participant's student number (NSID) and system numbers were used to link their data across time. See Appendix H for consent and debriefing forms.

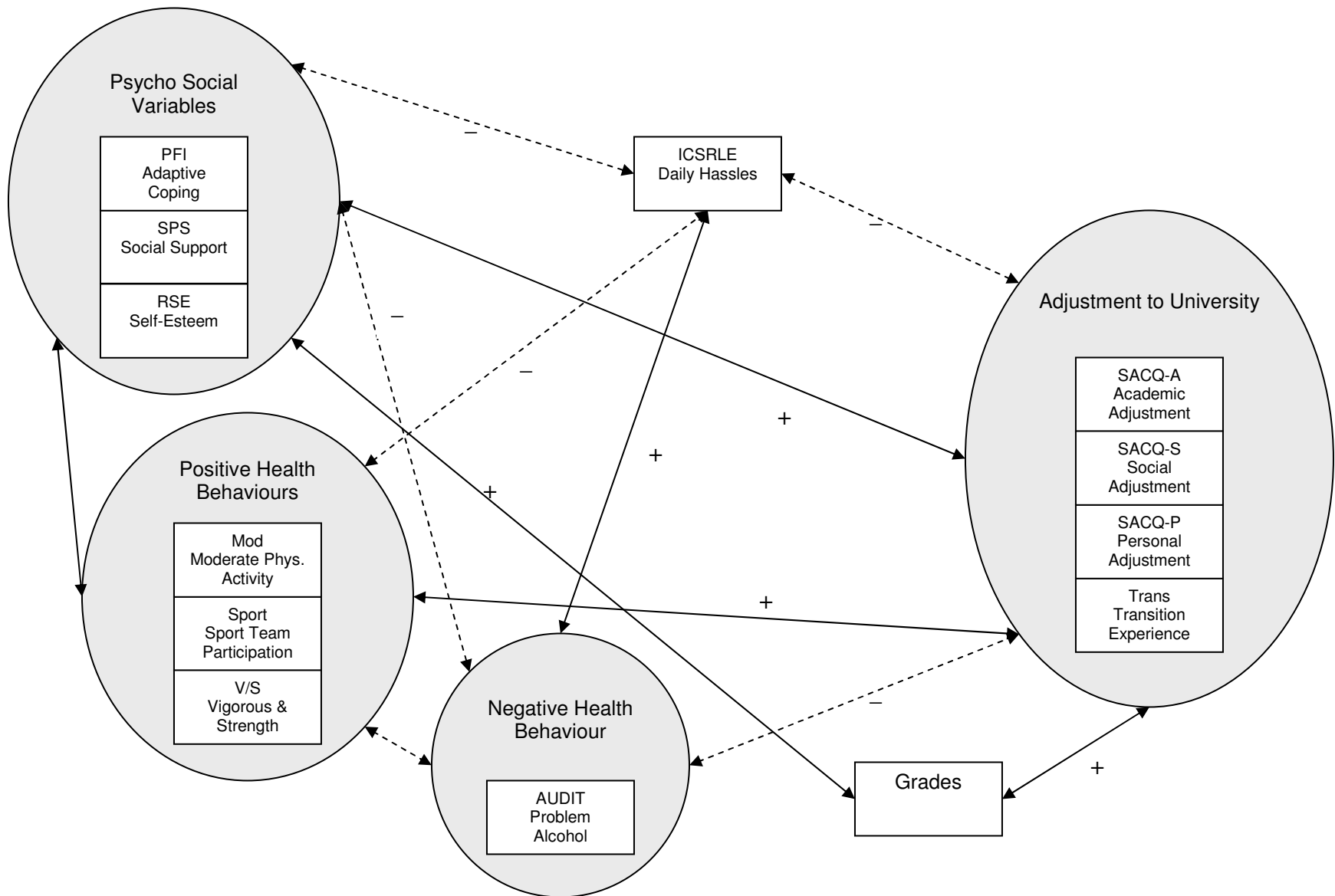


Figure. 3 Conceptual map of scales used to measure risk and protective factors and outcomes

3. Results

3.1 Data Screening

3.1.1 *Missing data.* The data was entered on line by the participants and was then downloaded directly to the data file for analyses. Answers were recorded as missing data when the participant chose the option that allowed them to not answer a question. Two participants were deleted from the data set because they did not fill in enough of the questionnaire to be able to use their data for the analyses. One participant had left many answers blank including their age and sex. The other participant logged off after answering the first measure's questions only. The overall percentage of missing data was low, with less than 5% missing. Missing data was not replaced. Therefore, there was some variability in sample sizes. Depending on the analyses sample sizes for Time 1 ranged from $N= 200$ to $N= 230$. At Time 2, the sample sizes ranged between $N= 61$ to $N=66$.

3.1.2 *Univariate Outliers.* In order to detect univariate outliers, box plots and z-scores were examined. There were three extreme outliers in the Time 1 AUDIT, and one in the Time 2 AUDIT. Extreme scores exceeded 3.29, $p<.001$. The scale was not transformed, rather the extreme scores were brought in so that they remained the highest raw scores in the sample but no longer reflected z scores greater than 3.29 (Tabachnick & Fidell, 2001).

3.1.3 *Multivariate Outliers and Assumptions.* All independent variables and dependent variables were screened to assess suitability for multivariate analyses. The Mahalanobis distance suggests that there were no multivariate outliers. Plots of the residuals suggest that the assumptions of normality, linearity, and homoscedasticity of residuals were not violated. The variables were not observed to have problems with multicollinearity; none of the tolerances approached zero. The variables were also screened for normality (using histograms) and were found to be approximately normally distributed. To see that the independent variables were linearly related to the dependant variables scatter plot were examined. All relations were found to be approximately linear. The variables were judged to be adequate for multivariate analyses.

3.2 Preliminary Analyses

3.2.1 Reliabilities

A reliability analysis was conducted on each of the scales employed in the present study. All scales demonstrated an acceptable level of reliability with most alpha values at .80 or greater. In cases where values fell below .80, internal consistencies were nevertheless considered adequate. Alpha values that did fall below .80 remained above .70. Although acceptable alpha levels are largely determined by the amount of error in measurement that a researcher is willing to accept, an alpha of .70 or higher is commonly used in social science (Garson, 2007). The alpha obtained for the full scale score on the SACQ was observed to be .94 at Time 1. All other alpha reliabilities are presented on the diagonal in the correlation Table 1 and Table 2.

3.2.2 Completers versus non-completers

Chi-square tests were conducted for gender and living situation in order to look for a difference in group composition between the group of participants who completed the questionnaire at Time 1 and Time 2 (completers) and those who provided information at Time 1 only (non-completers). There was a significant association between gender and completion status, $\chi^2(1, N=230) = 9.82, p = .002$. Fewer men than were expected on the basis of chance completed the survey at Time 2. Specifically, only 7 men completed the survey at Time 2 despite an expected count of 16. At Time 1, 21.9 % of the sample's participants were men. At Time 2, only 9.5 % of the sample consisted of men. Given this low number, men were excluded from all analyses involving Time 2 data. There was no statistically significant association between completion status and living situation (at home or away from home).

Additional analyses in the form of t-tests were conducted to compare completers and non-completers across age and academic achievement (self-reported grades) as well as key outcome variables including perceived transition experience and adjustment to university. Analyses revealed that completers and non-completers did not differ significantly from one another at Time 1 in terms of age, grades achieved in the first

Table 1. Bivariate zero-order correlations between demographic, psychosocial, and health variables at Time 1.

Measures	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.T1 Age																
2.T1 Gender	.04															
3.T1 Living	-.02	.07														
4.T1 PFI	.01	-.18**	.01	.90												
5.T1 ICSRLE	-.09	.05	.03	-.51**	.92											
6.T1 SPS	-.16*	.04	-.08	.32**	-.36**	.91										
7.T1 RSE	-.10	-.12^t	-.02	.59**	-.52**	.50**	.88									
8.T1 V/S	-.11^t	-.07	-.06	.15*	-.11^t	.06	.19**									
9.T1 Mod	-.06	-.04	.07	.15*	-.00	.16*	.17**	.24**								
10.T1 Sport	-.06	-.22**	-.06	.15*	-.01	-.04	.17*	.36**	-.18**							
11.T1 AUDIT	.01	-.05	.07	-.01	.10	-.06	.06	.11^t	.00	.27**	.87					
12.T1 Grades	-.03	-.04	-.08	.12^t	-.23**	.12^t	.19**	.03	.17*	-.01	-.18**					
13.T1 SACQ-A	-.01	.01	-.04	.42**	-.60**	.38**	.47**	.21**	.17*	.02	-.18**	.49**	.87			
14.T1 SACQ-S	-.18**	-.15*	.11	.47**	-.44**	.49**	.49**	.20**	.24**	.16*	-.01	.19**	.51**	.81		
15.T1 SACQ-P	-.03	-.23**	-.11	.64**	-.66**	.38**	.61**	.16*	.17**	.12^t	-.07	.24**	.61**	.52**	.86	
16.T1 Trans	.05	-.16*	-.12^t	.43**	-.56**	.25**	.39**	.22**	.07	.11	.02	.32**	.50**	.45**	.54**	.78
Mean	18.46			3.33	2.11	3.33	2.93	3.74	2.94	.55	6.12	3.93	5.57	5.95	4.57	3.29
SD	1			.52	.40	.41	.50	3.40	2.32	.79	5.73	1.03	.84	.96	1.10	.88
N	214	229	211	230	230	230	230	229	227	228	230	215	227	227	227	230

Note: All significant correlations have asterisks and are in bold, ** $p < .01$, * $p < .05$, ^t $p < .10$

Time 1 correlations include full sample $df = 198$ to 228 . Alpha coefficients for internal consistency of multi-item scales appear on the diagonal.

Age = age of participant; Gender, men = 0, women = 1; Living, living situation; PFI, Personal Functioning Inventory (adaptive coping); ICSRLE, Inventory of College Students Recent Life Experiences (daily hassles); SPS, Social Provisions Scale (social support); RSE, Rosenberg Self-esteem Scale (self-esteem); V/S, Vigorous and strength building physical activity; Mod, Moderate physical activity; Sport, Sports team participation; Health, self-rated physical health; AUDIT, problem alcohol consumption; Grades, self reported academic average; SACQ-A, academic adjustment to university; SACQ-S, social adjustment to university; SACQ-P, personal adjustment to university; Trans, perceived experience of the transition

Table 2. Bivariate zero-order correlations between demographic, psychosocial, and health variables at Time 2.

Measures	17	18	19	20	21	22	23	24	25	26	27	28	29
17.T2 PFI	.91												
18.T2 ICSRLE	-.56**	.92											
19.T2 SPS	.57**	-.48**	.92										
20.T2 RSE	.64**	-.50**	.49**	.90									
21.T2 V/S	-.13	.02	.02	-.10									
22.T2 Mod	-.09	.06	.05	-.10	.36**								
23.T2 Sport	.08	.05	.07	-.02	.23[†]	.05							
24.T2 AUDIT	.02	.18	.06	.01	.13	.16	.26*	.86					
25.T2 Grades	.21[†]	-.22[†]	.03	.19	.03	-.00	.14	-.37**					
26.T2 SACQ-A	.41**	-.62**	.28*	.35**	.14	-.03	.04	-.29*	.60**	.86			
27.T2 SACQ-S	.62**	-.45**	.54**	.31*	.04	-.12	.25*	-.07	.30*	.47**	.74		
28.T2 SACQ-P	.72**	-.60**	.59**	.56**	.02	.09	.22[†]	.04	.21[†]	.47**	.54**	.84	
29.T2 Trans	.48**	-.53**	.37**	.38**	.06	-.03	.23[†]	-.14	.48**	.56**	.68**	.46**	.85
Mean	3.34	2.18	3.30	2.98	3.47	3.27	.46	6.02	2.91	4.32	4.52	4.18	3.11
SD	.56	.42	.50	.66	2.92	2.28	.77	5.46	.94	.86	1.05	1.10	.95
N	66	66	66	66	66	66	65	66	66	66	66	66	66

Note: All significant correlations have asterisks and are in bold, ** $p < .01$, * $p < .05$, [†] $p < .10$

Time 2 correlations are for women only with $df=58-64$. Alpha coefficients for internal consistency of multi-item scales appear on the diagonal.

PFI, Personal Functioning Inventory (adaptive coping); ICSRLE, Inventory of College Students Recent Life Experiences (daily hassles); SPS, Social Provisions Scale (social support); RSE, Rosenberg Self-esteem Scale (self-esteem); V/S, Vigorous and strength building physical activity; Mod, Moderate physical activity; Sport, Sports team participation; Health, self-rated physical health; AUDIT, problem alcohol consumption; Grades, self reported academic average; SACQ-A, academic adjustment to university; SACQ-S, social adjustment to university; SACQ-P, personal adjustment to university; Trans, perceived experience of the transition

two months of university, perceived transition experience, or adjustment to university as measured by the academic, social, and personal/emotional subscales (all p 's > .11, see Appendix J for non-significant t -values). Using only the women in the sample at Time 1, t -tests were conducted to compare completers with non completers on the same variables (age, grades, transition experience, academic, social, and personal/emotional adjustment to university). There were no significant differences between women who completed the questionnaire at both time points and women who only provided data at Time 1 on any of the measures (all p 's > .12, see appendix J for non-significant t -values).

3.3 Descriptives at Time 1

3.3.1 Under age alcohol consumption. Using data collected for the full sample, a dichotomous variable was created on the basis of scores from the AUDIT to reflect a group of students who did not consume any alcohol (score of zero) versus a group of students who reported consuming alcohol (scores that are \leq to 1). A second dichotomous variable was created for age to represent students who were under 19 years of age versus students who were at least 19 years of age (the legal age for buying and consuming alcoholic beverages in Saskatchewan). It is notable that 55% of the participants reported consuming alcohol underage. A Chi square test of the association between the dichotomous variable for age and the dichotomous variable for drinking showed no significant relation between drinking and being legally old enough to drink (see Table 3 for frequencies). A third dichotomous variable was created to reflect the absence of problem drinking (AUDIT score of 0 to 7) versus the presence of problematic levels of alcohol consumption (AUDIT score of 8 and above). Interestingly, 34% of the sample reported alcohol consumption scores that are indicative of hazardous drinking. A Chi-Square test was run between being of legal age to drink and having a score on the AUDIT that is indicative of problematic levels of alcohol consumption. There was no significant association between students being under the legal drinking age and problem drinking (see Table 4 for frequencies).

3.3.2 Positive and negative perceptions of the transition experience. Perceptions of the transition experience varied across the sample in the fall of first year with some

Table. 3 The frequency and proportion of students who consume alcohol by legal drinking age.

Alcohol Consumption	Legal Drinking Age					
	No		Yes		Total	
	Frequency	Proportion*	Frequency	Proportion*	Frequency	Proportion*
No	29	13.6%	7	3.2%	36	16.8%
Yes	117	54.7%	61	28.5%	178	83.2%
Total	146	68.2%	68	31.8%	214	100%

* Proportion is percentage of total N=214.

Table. 4 The frequency and proportion of students who were classified as problem drinkers by legal drinking age.

Problematic Alcohol Consumption	Legal Drinking Age					
	No		Yes		Total	
	Frequency	Proportion*	Frequency	Proportion*	Frequency	Proportion*
No	102	47.7%	40	18.7%	142	66.4
Yes	44	20.6%	28	13.1%	72	33.6%
Total	146	68.2%	68	31.8%	214	100%

* Proportion is percentage of total N=214.

students having had a difficult time and others rating their transition experience much more positively. At Time 1, 69% of respondents indicated that their perceived transition experience was a 3 or higher meaning that their experience was neutral or better ($M=3.77$, $SD=.53$) whereas the remainder of students reported a negative and stressful transition ($M=2.23$, $SD=.51$). Broken down by gender, 80% of the men in the sample indicated that their transition experience was neutral or better whereas a smaller proportion of women, 65%, rated their transition experience as neutral or better. Given that differences in these proportions tell only part of the story, a direct comparison between the means for transition experience reported for men ($M=3.56$, $SD=.82$) as compared to women ($M=3.21$, $SD=.89$) is presented below.

3.4 Differences as a function of gender and living arrangement

In order to examine whether the adjustment to university varied for men and women or for students living at home versus living away from home a Multivariate Analysis of Variance was conducted involving Time 1 scores in academic, social and personal/emotional adjustment with Gender and Living Arrangement as independent variables along with a Univariate Analysis of Variance with Time 1 Transition Experience scores as the dependent variable and Gender and Living Arrangement as independent variables. The analysis of transition experiences scores was conducted separately from the three adjustment domains because transition experience was treated as conceptually distinct (i.e., a direct exploration of the quality of transition as compared to a measure of different domains of adjustment). Moreover, while each of the adjustment measures is a subscale from the SACQ, the transition experience measure is a separate instrument.

Time 1 scores were isolated and analyzed separately because of the substantial attrition observed at Time 2. In order to examine changes in adjustment for students who were living at home or away from home over time, a similar set of analyses were conducted with the addition of Time as a repeated measures factor (Time 1, Time 2). As was previously mentioned, men were excluded from the analyses involving Time 2. The means and standard deviations for analyses involving differences as a function of gender and living arrangement have been reported together in Table 5. Source tables

Table 5.

Means and standard deviations for men and women at Time 1 and for women at Time 1 and Time 2, living at home and away from home.

Measure	Time 1				Time 1 – Time 2 (women only)			
	Men	Women	Living at Home	Living Away	Time 1	Time 2	Living at Home	Living Away
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Academic Adjustment	5.51 (.84)	5.56 (.82)	5.59 (.86)	5.52 (.80)	5.52 (.80)	4.28*** (.82)	4.89 (.86)	4.89 (.67)
Social Adjustment	6.22 (.99)	5.87* (.95)	5.84 (.93)	6.05* (.99)	5.75 (.96)	4.54*** (1.05)	5.13 (.97)	5.13 (.97)
Personal Adjustment	5.02 (.93)	4.44*** (1.10)	4.70 (1.15)	4.46 (1.03)	4.43 (1.12)	4.16** (1.07)	4.56 (1.14)	4.06* (.87)
Transition Experience	3.51 (.82)	3.20* (.88)	3.38 (.91)	3.18 (.85)	3.12 (.89)	3.12 (.92)	3.16 (.90)	3.08 (.77)

Note: *** $p < .001$, ** $p < .01$, * $p < .05$

showing all significant and non-significant results for the following analyses appear in Appendix K for the interested reader.

3.4.1 Gender and living arrangement at Time 1. Results of the MANOVA revealed a significant main effect for gender on the best linear combination of the dependent variables; social, academic, and personal/emotional adjustment to university, $F(3,203)=7.35, p<.001$, partial $\eta^2 = .10$. There was also a significant main effect for living situation (living at home versus away from home), $F(3,203)=2.81, p=.041$, partial $\eta^2=.04$. At the multivariate level, the interaction between gender and living situation was not significant.

The tests of between-subject effects at the univariate level showed a significant difference between men and women on social adjustment scores, $F(1,205)=5.22, p=.023$, partial $\eta^2=.03$, with men scoring significantly higher than women (see Table 4). There was also a significant difference between men and women on personal/emotional adjustment scores, $F(1,205)=10.52, p=.001$, partial $\eta^2=.05$ where on average, men reported higher personal adjustment as compared to women. There was no significant difference between men and women on academic adjustment.

Univariate tests involving living situation as the independent variable showed a significant difference in social adjustment scores favouring students who were living away from home in the fall of their first year as compared to, students who were living at home, $F(1,205)=5.04, p=.026$, partial $\eta^2=.02$. There was no significant difference between students living at home or away from home on academic or personal/emotional adjustment.

The univariate ANOVA conducted to investigate the effects of gender and living situation on perceived transition experience revealed that men rated the transition more positively as compared to women at Time 1, $F(1,207)=4.37, p=.038$, partial $\eta^2 = .02$. Transition experience scores were not observed to vary significantly across living arrangement (home versus away) nor were gender and living arrangement observed to interact in this case.

3.4.2 Adjustment by Living arrangement across Time 1 and Time 2. Results of the Multivariate Repeated Measures Analysis of Variance conducted to examine whether each of the three sub-scales of adjustment (social, academic, personal/emotional)

changed over time for women who were living either at home or away from home showed that the repeated measures factor (Time) was significant, $F(3,57)=185.64$, $p<.001$, partial $\eta^2=.91$. The univariate tests showed that for these women, each of the three subscales changed significantly from Time 1 to Time 2. Academic adjustment significantly decreased from Time 1 to Time 2, $F(1,59)=302.54$, $p<.001$, partial $\eta^2=.84$. Similarly, both social adjustment, $F(1,59)=238.90$, $p<.001$, partial $\eta^2=.80$, and personal adjustment, $F(1,59)=9.17$, $p=.004$, partial $\eta^2=.14$, were observed to decline between the fall and spring of first year university. At the multivariate level, there was a trend toward significance for the between subject factor (living situation), $F(3,57)=2.63$, $p=.06$, partial $\eta^2=.12$. Follow-up univariate tests showed that at both time points women who lived away from home were less well adjusted personally/emotionally as compared to women who lived at home, $F(1,59)=4.21$, $p=.05$, partial $\eta^2=.07$. There was no significant difference between women who were living at home or away from home on academic or social adjustment. No significant interactions between time and living situation were observed.

A Repeated Measures Analysis of Variance was conducted to examine whether perceptions of the transition experience changed over time for women living at home or away from home. There were no significant main effects or interactions. The average for women's ratings of the transition experience was not significantly different over time. Among the women who completed the questionnaire at both time points ($N=66$), 46% indicated at Time 1 that their transition experience was a 3 or higher. Four months later at Time 2, 47% rated their transition experience as a 3 or higher.

3.5 Primary Analyses

3.5.1 Intercorrelations of adjustment and predictor variables

A series of bivariate correlations were conducted to explore the intercorrelations among variables within each time point as well as across time. The correlation coefficients for Time 1 are presented in Table 1 (page 27). The correlation coefficients for Time 2 are presented in Table 2 (page 28). The correlation coefficients between Time 1 and Time 2 measures are presented in Table 6.

Table 6. Bivariate zero-order correlations between Time 1 and Time 2 demographic, psychosocial, and health variables.

Measures	T1 Age(W)	T1 Livng(W)	T1 PFI	T1 ICSRLE	T1 SPS	T1 RSE	T1 V/S	T1 Mod	T1 Sport	T1 AUDIT	T1 Grades	T1 SACQ-A	T1 SACQ-S	T1 SACQ-P	T1 Trans
T2 PFI	.19	-.03	.81**	-.45**	.48**	.62**	.09	.08	.15	.15	-.04	.37**	.54**	.56**	.31*
T2 ICSRLE	-.14	.09	-.55**	.74**	-.32**	-.49**	-.12	-.16	-.14	.09	-.09	-.57**	-.27*	-.56**	-.49**
T2 SPS	.02	-.05	.54**	-.43**	.82**	.63**	.06	-.00	.27*	.14	-.21^t	.35**	.48**	.60**	.28*
T2 RSE	.26*	.12	.50**	-.45**	.39**	.64**	.11	.12	.03	.10	.05	.31*	.26*	.44**	.25*
T2 V/S	-.10	.14	-.07	-.11	.10	.04	.54**	.12	.06	.11	-.01	.11	.14	.08	.07
T2 Mod	-.17	-.11	.00	.04	.05	.10	.30*	.33**	.17	.20	.06	.04	.02	.15	-.02
T2 Sport	-.08	.05	-.03	-.09	.07	.20	.21^t	-.10	.49**	.16	-.01	.01	.34**	.25*	.26*
T2 AUDIT	.10	-.00	-.06	.09	.11	-.00	.03	-.02	.08	.86**	-.23^t	-.28*	.10	-.06	-.01
T2 Grades	.07	-.09	.13	-.17	.12	.18	.17	.17	.08	-.43**	.71**	.53**	.22^t	.25*	.31*
T2 SACQ-A	.17	.06	.40**	-.52**	.24^t	.36**	.36**	.18	.05	-.34**	.35**	.80**	.34**	.48**	.39**
T2 SACQ-S	-.06	-.04	.53**	-.45**	.41**	.41**	.16	-.02	.15	-.12	-.02	.52**	.83**	.54**	.42**
T2 SACQ-P	.08	-.25*	.61**	-.46**	.50**	.69**	.20	.19	.21^t	.11	.07	.50**	.44**	.81**	.42**
T2 Trans	.04	-.00	.47**	-.52**	.28*	.44**	.28*	.18	.12	-.18	.33**	.61**	.59**	.51**	.68**

Note: All significant correlations have asterisks and are in bold, ** $p < .01$, * $p < .05$, ^t $p < .10$
Correlations are for women only with $df = 58$ to 64 .

3.5.2 Concurrent Prediction of Early (Time1) Adjustment to University

3.5.2.1 Overview. In order to examine individual differences in markers of early adjustment to the transition (Time 1), a series of standard regression analyses were conducted using academic adjustment, social adjustment, personal adjustment, and transition experience as criterion variables. For each regression, the criterion was predicted using a standard set of demographic and self-report indices of functioning. This standard set was created for use in all four regressions in order to increase the comparability across the regression analysis. The standard set was chosen based on zero-order correlations with the criterion variables. Each predictor variable was included in the standard set if it shared a zero order correlation with at least two of the four criterion variables. The standard set of predictor variables consisted of gender, adaptive coping, daily hassles, social support, self esteem, vigorous and strength building physical activity, moderate physical activity, and academic average. All predictor variables were entered simultaneously on one step.

3.5.2.2 Transition Experience at Time 1. Results revealed that the combined variables accounted for 42.5% of the variability in early transition experience measured in the fall of first year. An inspection of the individual standardized beta weights (See Table 7) indicated that adaptive coping, daily hassles, level of vigorous and strength building physical activity, and academic average were uniquely predictive of the fall transition experience when other variables were controlled. Specifically, more positive perceptions of the transition to university were associated with higher levels of adaptive coping, lower levels of daily hassles, higher levels of vigorous and strength building physical activity, and better academic achievement (academic average). In addition, a better transition experience was marginally predicted by the gender of the respondent with men perceiving the transition more positively. The squared semi-partial correlations demonstrated that 10% of the unique variance in transition experience at Time 1 can be accounted for by daily hassles. Academic grades accounted for approximately 4% of the unique variance in transition experience while 2% of the unique variance in transition experience was accounted for by vigorous and strength building activities. Adaptive coping accounted for 1.5 % of the unique variance in early transition experience.

Table 7. Summary of regression analysis for variables predicting transition experience, academic, social and personal adjustment at Time 1.

Criterion Variables – Adjustment to University (Time 1)												
Predictor Variables (Time 1)	Perceived Transition Experience (N=213)			SACQ Academic subscale (N=211)			SACQ Social subscale (N=211)			SACQ Personal subscale (N=211)		
	r^b	β^c	Part ^d	R	β	Part	r	β	Part	r	β	Part
Step 1:												
Gender ^a	-.16*	-.096 ^t	-.093	.01	.070	.068	-.15*	-.105 ^t	-.102	-.23**	-.126**	-.122
Adaptive Coping	.43**	.164*	.124	.42**	.073	.055	.47**	.196**	.148	.64**	.257***	.194
Daily Hassles	-.56**	-.408***	-.318	-.60**	-.380***	-.296	-.44**	-.175*	-.137	-.66**	-.396***	-.309
Social Support	.25**	.042	.036	.38**	.108 ^t	.092	.49**	.315***	.267	.38**	.025	.022
Self-Esteem	.39**	-.009	-.006	.47**	.080	.056	.49**	.069	.048	.61**	.205***	.143
Vigorous/Strength	.22**	.151**	.143	.21**	.131**	.124	.20*	.062	.059	.16*	-.012	-.011
Moderate activity	.07	-.019	-.017	.17*	.026	.024	.24**	.121*	.113	.17**	.063	.059
Academic Average	.32**	.190***	.180	.49**	.365***	.347	.19**	.054	.052	.24**	.047	.045
Total R ²	42.5%			55.3%			43.4%			61.6%		
Model	$F(8,204)=18.88, p<.001$			$F(8,202)=31.29, p<.001$			$F(8,202)=19.39, p<.001$			$F(8,202)=40.58, p<.001$		

Note: *** $p>.001$, ** $p<.01$, * $p<.05$, ^t $p<.10$; ^a men = 0, women = 1; ^b correlation coefficient; ^c Betas are standardized weights obtained from the standard regression; ^d Semi-Partial correlation coefficients.

3.5.2.3 Academic Adjustment at Time 1. Findings showed that approximately 55% of the variance in academic adjustment was accounted for by the set of variables. An inspection of the individual standardized beta weights (See Table 6) indicated that lower daily hassles, more vigorous and strength building activities and higher academic averages were uniquely predictive of better academic adjustment in the fall when other variables were controlled. The squared semi-partial correlations showed that academic average accounted for 12% of the variability in academic adjustment. Daily hassles accounted for almost 9% of the unique variance in academic adjustment, and 1.5% of the unique variance was accounted for by vigorous and strength building activities.

3.5.2.4 Social Adjustment at Time 1. Results involving social adjustment in the fall of first year indicated that the variables accounted for 43% of the variance. The individual standardized beta weights (See Table 6) show that adaptive coping, daily hassles, social support and moderate physical activity were all significantly predictive of social adjustment when other variables were controlled. Students who perceived themselves to be better adjusted socially at the start of the year, were more adaptive in their coping, reported fewer daily hassles, had greater social support and reported a higher level of moderate physical activity. Better social adjustment was marginally predicted by gender, with men demonstrating better social adjustment. The squared semi-partial correlations show that 7% of the unique variance in social adjustment was attributable to social support with adaptive coping adding 2% of the unique variance. Daily hassles accounted for 2% and moderate physical activity accounted for just over 1% of the unique variance in social adjustment.

3.5.2.5 Personal/Emotional Adjustment at Time 1. The predictors accounted for 62% of the variability in personal adjustment measured in the fall of first year. The respondent's gender, level of adaptive coping, daily hassles and self-esteem were all uniquely predictive of personal/emotional adjustment in the fall at Time 1 (Table 6). On average men reported better personal/emotional adjustment. Higher scores on the personal/emotional adjustment scale were also associated with higher adaptive coping scores, fewer reported hassles and higher self-esteem. An examination of the squared semi-partial correlations shows that daily hassles accounted for 16% of the unique variance in personal/emotional adjustment while adaptive coping accounted for 7% of

the unique variance. Self-esteem accounted for 4% of the unique variance in personal/emotional adjustment and the gender of the respondent accounted for almost 2% of the unique variance in personal/emotional adjustment.

3.5.3 Longitudinal Prediction of Adjustment to University at Time

3.5.3.1 Overview. To examine the individual differences in adjustment that occurred over the first year of university, a series of hierarchical regression analyses were conducted. As noted earlier, men were excluded from these analyses because only 7 men participated at Time 2. Of interest, then, was whether women's adjustment to university at Time 2 could be predicted from measures of psychosocial and physical health that were collected at Time 1. For example, in an effort to predict academic adjustment during the second semester from early psychosocial and health variables (over and above knowing a student's academic adjustment during first term), academic adjustment (Time 1) was entered on the first step to control for adjustment level at Time 1. The first step was followed by entering the standard set of psychosocial and physical health variables (Step 2) that had also been collected at Time 1 to predict variance in academic adjustment at Time 2 (dependent variable) over and above knowing the level of academic adjustment at Time 1.

The sample size available for this series of regressions ($n=66$) was notably reduced from the original sample size at Time 1, necessitating a reduction in the number of predictors employed. Accordingly, a subset of psychosocial and physical health predictors was developed by examining the zero-order correlations between Time 1 predictor variables and Time 2 outcome variables. Only variables that had significant zero order correlations with at least two of the four outcome variables were included in the reduced set of predictor variables. Specifically, adaptive coping, daily hassles, social support, self-esteem, vigorous and strength building activity, and academic average were included as predictors on Step 2 in these regressions.

3.5.3.2 Stability/Consistency of the outcome measures. In the current regression strategy adding the Time 1 measure on the first step serves to hold the Time 1 adjustment levels constant in order to predict variability in the measure of adjustment that changes over time. One way to index the consistency of scores administered at two time points is by looking at the intercorrelation between scores participants obtain on the

measure at both time points (Cramer & Howitt, 2004; Pearson Assessments, 2007). From a psychometric perspective this is referred to as test-retest reliability. The associated correlation coefficient is not a measure of whether an individual's *score* remains the same from one time point to the next (as would be measured by a difference score), but rather whether scores remain stable relative to the scores of other participants over time (Cramer & Howitt, 2004). The correlation coefficient obtained for the same measure at two time points can be referred to as a stability coefficient (Bruning & Kintz, 1997; Pearson Assessments, 2007). Thus, in the prediction of Time 2 adjustment, by first entering the same measure of adjustment at Time 1, we obtain an estimate of the stability in variance for that adjustment index between Time 1 and Time 2. The remaining or residual variance represents variability in the adjustment index that changes over time. Of interest in these longitudinal analyses, was whether individual differences in this "change" could be predicted by psychosocial and physical health factors.

3.5.3.3 Longitudinal prediction of the transition experience. Results of the hierarchical regression showed that the transition experience at Time 1 accounted for 46% of the variance in transition experience at Time 2, $F(1,63)=54.23$, $p<.001$. The correlation between the transition experience at Time 1 and the transition experience at Time 2 was $r(64)=.68$, $p<.01$ indicating at least moderate stability in individual reports of experience over time. The inclusion of psychosocial and health variables on Step 2 increased the proportion of variance explained marginally, $F\text{-change}(6,57)=2.15$, $p=.06$, accounting for an additional 9.9% of the variance. An inspection of the individual standardized beta weights (See Table 8) indicated that only transition experience at Time 1 was significantly predictive of the transition experience at the end of the first year when other variables were controlled. Specifically, better perceived transitions at Time 1 were associated with better perceived transitions at Time 2. On their own, none of the Time 1 predictor variables were uniquely predictive of perceptions of the transition experience after perceptions of the transition experience at Time 1 had been controlled.

3.5.3.4 Longitudinal prediction of academic adjustment. Results of the hierarchical regression showed that 63% of the variance in academic adjustment at

Table 8. Longitudinal prediction of *women's* adjustment to university at Time 2.

	Criterion Variables – Adjustment to University (Time 2)							
	Overall Transition Experience		SACQ Academic subscale		SACQ Social subscale		SACQ Personal subscale	
Predictors (Time 1)		(N=65)		(N=64)		(N=64)		(N=64)
	r^a	β^b	r	β	r	β	r	β
Step 1:								
Criterion (time1)	.68**	.680***	.80**	.796***	.83**	.826***	.81**	.815***
R ²		46.3%		63.4%		68.3%		66.4%
Step 2:								
Criterion (time 1)	.68**	.511***	.80**	.653***	.83**	.755***	.81**	.717***
Adaptive Coping	.47**	.199	.40**	.003	.53**	.156	.61**	.154
Daily Hassles	-.52**	-.010	-.52**	-.099	-.45**	-.171 ^t	-.46**	.216*
Social Support	.28**	-.008	.24 ^t	.017	.41**	-.074	.50**	-.057
Self-Esteem	.44**	.051	.36**	-.046	.41**	-.037	.69**	.246*
Vigorous/Strength	.28*	.140	.36**	.203*	.16	-.032	.20	-.008
Academic Avge.	.33**	.164 ^t	.35**	.069	-.02	-.009	.07	.000
ΔR^2 (Change)	9.9%		4.2%		5.1%		5.0%	
ΔF (Change)	$F(6,57)=2.15, p=.061$		$F(6,56)=1.22, p=.311$		$F(6,56)=1.78, p=.119$		$F(6,56)=1.65, p=.151$	
Total R ²	56.2%		67.6%		73.4%		71.5%	
Full Model	$F(7,57)=10.43, p<.001$		$F(7,56)=16.68, p<.001$		$F(7,56)=22.05, p<.001$		$F(7,56)=20.05, p<.001$	

Note: $p<.001$, ** $p<.01$, * $p<.05$, ^t $p<.10$; ^a zero order correlation coefficients; ^b Betas are standardized weights obtained from the second step when all variables were in the equation unless otherwise noted

Time 2 is attributable to academic adjustment reported at Time 1, $F(1,62)=107.20$, $p<.001$. Variance in academic adjustment was observed to be quite stable over first year with the average of the student scores at Time 1 correlating strongly with their scores at Time 2, $r(64)=.80$, $p<.01$. Higher scores on the academic adjustment subscale at Time 1 were associated with higher scores on the academic adjustment subscale at Time 2. The variance accounted for did not significantly increase with the addition of psychosocial and physical health predictors on step 2. Although not interpretable given that the set of psychosocial and physical health variables did not add significantly to the prediction of Time 2 academic adjustment, individual standardized beta weights are presented in Table 8 for the interested reader.

3.5.3.5 Longitudinal prediction of social adjustment. Social adjustment at Time 1 accounted for just over 68% of the variance in social adjustment at Time 2, $F(1,62)=133.51$, $p<.001$. Variability in social adjustment showed a high degree of stability over time with scores at Time 1 strongly tied to scores at Time 2, $r(64)=.83$, $p<.01$. Psychosocial and physical health variables added on Step 2 did not significantly change the amount of variance accounted for. Individual standardized beta weights are depicted in Table 8.

3.5.3.6 Longitudinal prediction of personal/emotional adjustment. Results of the hierarchical regression showed that personal/emotional adjustment at Time 1 accounted for just over 66% of the variance in personal/emotional adjustment at Time 2, $F(1,62)=122.78$, $p<.001$. Variability in personal/emotional adjustment was also stable over time, Time 1 and Time 2 scores were strongly correlated, $r(64)=.81$, $p<.01$. With the inclusion of the psychosocial and physical health variables on Step 2, the proportion of variance explained did not increase significantly. Individual standardized beta weights are depicted in Table 8.

3.5.4 Mediating Relations at Time 1

Several mediational hypotheses were generated in the present investigation. Baron and Kenny (1986) have specified requirements that must be met in order to test a mediating relation. First, significant relations demonstrated through zero order correlations must be established between the independent variable and the mediator (*a*), the mediator and the dependent variable (*b*), and the independent variable and the

dependent variable (*c*) (See Figure 4 for a diagram of the first hypothesized mediational relation) Second, we test to see if the relation between the independent variable and the dependent variable is mediated by running a regression analyses. On the first step, only the independent variable is entered in the prediction of the dependent variable, on the second step, both the independent variable and the mediator are entered in the prediction of the dependent variable. If the mediating relation is present, the relation between the independent variable and the dependent variable should be reduced in the presence of the mediator. In the case of pure mediation, the relation between the independent and dependent variable would no longer be significant.

In the case where the direct path between the independent variable and dependent variable is reduced, but remains significant, Sobel (1982), referred to by Baron and Kenny (1986) suggests that we test the complete mediating path from independent variable to mediator to dependent variable, (paths *a* and *b*) for significance. To run this test the regression coefficients and their standard errors for *a* and *b* (the paths in the mediating chain) are used to find the path coefficient and the standard error for the two part path. The path coefficient and standard error are then used to form a

$$t \text{ ratio; } t = \frac{\beta_a \beta_b}{s_{\beta_a \beta_b}}$$

where $\beta_a \beta_b = \beta_a \times \beta_b$ and $s_{\beta_a \beta_b} = \sqrt{\beta_a^2 s_b^2 + \beta_b^2 s_a^2 - s_a^2 s_b^2}$. With large samples, the null hypothesis is rejected at $\alpha = .05$ when the *t* value exceeds ± 1.96 . There are *N* - 3 degrees of freedom.

3.5.4.1 *Do daily hassles mediate the relation between adaptive coping and adjustment to university at Time 1?* For the purpose of mediational analyses, the full scale score of the SACQ was used as an index of university adjustment as compared to considering the individual domains of social, academic and personal/emotional adjustment. At Time 1, adaptive coping was significantly associated with both daily hassles, $r(225) = -.52, p < .001$, and overall university adjustment, $r(225) = .59, p < .001$. In addition, daily hassles were negatively associated with overall adjustment, $r(225) = -.67, p < .001$. Results of the regression analysis conducted to evaluate the final condition for mediation revealed that the standardized beta weight linking adaptive coping and

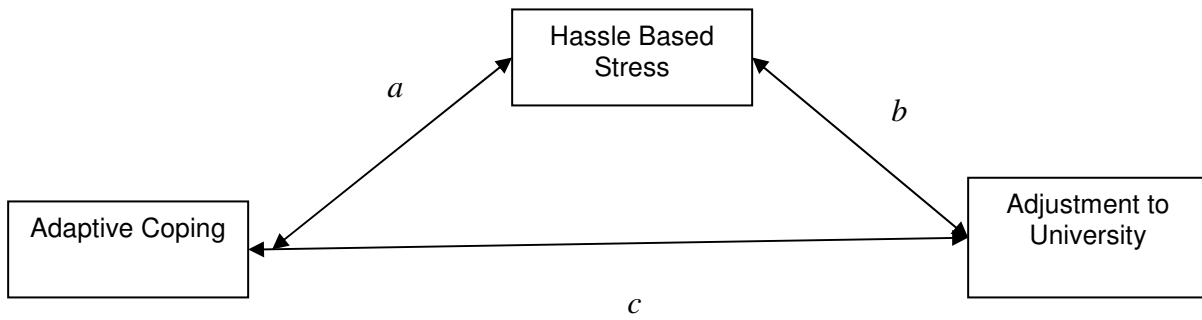


Figure 4

Diagram of hypothesized mediating role of hassle-based stress between coping and overall adjustment to university

university adjustment dropped from $\beta=.59$ to $\beta=.34$ when the daily hassles variable was entered into the equation. Although the beta coefficient was reduced it remained statistically significant thus requiring the use of Sobel's test of significance of the entire mediating chain. See Table 9 for required values.

The regression coefficients and their standard errors for a and b (the paths in the mediating chain) are used to find the path coefficient and the standard error for the two part path.

The regression coefficient for path a to b : $\beta_a \times \beta_b = .348$

Standard error for the combined path: $^s\beta_a\beta_b = \sqrt{\beta_a^2 s_b^2 + \beta_b^2 s_a^2 - s_a^2 s_b^2}$

$$= \sqrt{.266 \times .002 + .454 \times .003 - .003 \times .002}$$

$$= \sqrt{.001 + .001 - 0}$$

$$= .045$$

The path coefficient and standard error are then used to form a t ratio; $t = \frac{\beta_a\beta_b}{^s\beta_a\beta_b} = 7.733$

The null hypothesis is rejected. The entire path from adaptive coping to daily hassles and from daily hassles to university adjustment was observed to be significant, $t(223) = 7.73$, $p < .001$. Daily hassles partially mediate the relation between adaptive coping and adjustment to university. Students who cope well reported fewer daily hassles, which in turn, were predictive of better overall adjustment in the early part of the first year of university.

3.5.4.2 Do daily hassles mediate the relation between social support and adjustment to university at Time 1? In keeping with the criteria for mediation, social support was significantly associated with both daily hassles, $r(225) = -.37$, $p < .001$ and overall adjustment to university (full scale SACQ), $r(225) = .50$, $p < .001$ and as reported above, level of daily hassles was significantly correlated with adjustment. Results of the regression analysis conducted to evaluate the final condition for mediation revealed that the standardized beta weight linking social support and university adjustment dropped from $\beta=.50$ to $\beta=.30$ when daily hassles were entered into the equation. Although the beta coefficient was reduced it remained statistically significant thus requiring the use of

Table 9

Standardized beta coefficient, standard error and t value for paths connecting coping to hassles (a) and hassles to adjustment (b).

Path <i>a</i>		Path <i>b</i>	
Coping	→ Hassles	Hassles	→ Adjustment
β_a	-.516	β_b	-.674
s_a	.057	s_b	.049
t	-9.066	t	-13.668

Sobel's test of significance of the entire mediating chain. See Table 10 for required values. Analyses revealed that the entire path from social support to daily hassles and from daily hassles to university adjustment was not significant suggesting that daily hassles do not mediate the relation between social support and university adjustment.

3.5.4.3 Do daily hassles mediate the relation between health behaviour and adjustment to university at Time 1? None of the health behaviour indicators (moderately physical intense activity, vigorous and strength building activity, sports team participation, or problem drinking) correlated significantly with daily hassles (see Table 1), which meant that one of the required assumptions for mediation (i.e., independent variable significantly correlated with the mediator) was not met. Accordingly, no further consideration of daily hassles as a mediator between health behaviours and adjustment was pursued.

3.5.5 Changes in risk and protective factors across the year for women

It was predicted that changes in health behaviours would be associated with adjustment outcomes such that an increase in problem drinking would be related to poorer adjustment at the end of first year, or that an increase in physical activity would be positively related to better adjustment at the end of first year. In order to test these hypotheses, repeated measures Analyses of Variance (women only) for moderate physical activity, vigorous and strength building activity, team sports participation, and problematic alcohol consumption were conducted to explore whether there were any significant changes in these health behaviours over the course of first year. Living situation was included as an additional independent variable in these analyses.

3.5.5.1 Moderate physical activity. In the case of moderate physical activity, the repeated measures ANOVA revealed a significant main effect for time, $F(1,59) 6.19$, $p=.016$. Moderate physical activity increased slightly from fall ($M=2.66$, $SD=1.94$) to spring ($M=3.43$, $SD=2.25$) for women. There was no main effect of living situation and no significant interaction between time point and living situation.

3.5.5.2 Vigorous and strength building physical activity. The repeated measures ANOVA for vigorous and strength building physical activity showed no significant main effects for time or living situation and no significant interaction (See Appendix L for F -values).

Table 10

Standardized Beta coefficient, standard error and t value for paths between social support and hassles (*a*) and between hassles and adjustment (*b*).

Path a		Path b	
Social Support	→ Hassles	Hassles	→ Adjustment
β_a	-.366	β_b	-.674
s_a	.062	s_b	.049
t	-5.917	t	-13.668

3.5.5.3 Sports team participation. The repeated measures ANOVA showed no significant main effects for time or living situation and no significant interaction with regard to sports team participation.

3.5.5.4 Problem drinking behaviour. The repeated measures Analysis of Variance showed no significant main effects for time or living situation and no interaction with respect to problem drinking behaviour.

3.5.5.5 Change in risk and protective health variables as a predictor of adjustment at Time 2. Although only one of the health variables (i.e., moderate physical activity) showed a significant change over the first year, of interest was whether change for the risk and protective health variables would be associated with adjustment indices at Time 2. To this end, change scores were computed (T2 minus T1) for moderate physical activity (change in $M=.68$, $SD=2.44$), vigorous and strength building activity (change in $M=.11$, $SD=2.82$), sports team participation (change in $M=.08$, $SD=.74$), and alcohol consumption (change in $M=.29$, $SD=2.92$). Zero-order correlations showed that none of these change scores were significantly related to social, academic, personal/emotional adjustment or to the transition experience in the spring of first year. There was a non-significant trend toward an increase in vigorous and strength building type physical activity being related to lower levels of academic adjustment to university, $r(64) = -.23$, $p=.06$, and to lower transition scores $r(64) = -.23$, $p=.059$. There was also a non-significant trend toward an increase in alcohol consumption being related to an increase in sports team participation, $r(58) = .24$, $p=.06$.

3.5.5.6 Change in social support from Time 1 to Time 2. Although no specific hypothesis was made, a t-test was used in order to test for a difference between the level of social support women reported at Time 1 versus Time 2. The amount of social support women reported did not change significantly from Time 1 to Time 2, $t(65) = -.55$, $p=.58$.

3.5.5.7 Change in daily hassles from Time 1 to Time 2. A t-test was used in order to test for a difference between the level of daily hassles women reported at Time 1 and the level reported at Time 2. There was a trend toward a change in the amount of daily hassles women reported from Time 1 ($M=2.11$, $SD=.39$) to Time 2 ($M=2.18$, $SD=.42$), $t(65) = -1.79$, $p=.08$.

4. Discussion

The purpose of the present research project was to investigate the impact of protective and risk factors for late adolescents and young adults during their first year of university. Using a short-term longitudinal design, the current investigation considered a range of adjustment outcomes including social, academic, and personal/emotional adjustment to university as well as asking students directly about their perceptions of their transition experience at two time points during the first year of university (fall and spring). Of particular interest within this context of a naturally occurring stressful life event were the relations between psychosocial variables, health behaviours and adaptation to university. A series of hypothesized relations were explored in an effort to predict university adjustment and the nature of transition experiences during the first term (for men and women) as well as longitudinally over the first year (for women only). Of additional interest was the test of several hypotheses designed to explore whether reported daily hassle based stress served to mediate relations between coping, social support, or physical activity and adjustment to university. Finally, the possibility that changes in health behaviours across the first year of university contributed to adjustment outcomes was examined.

4.1 Does the transition into university present a stressful life event?

In general the majority of students perceived their transition experience to be neutral or better during the fall, but almost 1/3 found the transition to be difficult. Although the small number of males available for the second wave of data collection precluded consideration of changes in their transition experience, changes in university adjustment and perceptions of the transition experience were investigated for women. About half of the women who completed the questionnaire at both time points reported a neutral or better transition experience during both the Fall and Spring, with the other half reporting difficulty. Even though a large group of students seemed to be experiencing a positive transition during first semester, the point of the present study was to understand individual differences in who does well and who struggles.

Among women, on average, adjustment to university was observed to decrease significantly over the year. Specifically, women appeared to be less well adjusted academically, socially and personally/emotionally during their second semester.

Estimates of effect size indicate that in the realms of academic and social adjustment, the effect of time was in fact quite large (84% and 80%, respectively) whereas the role of change over time for personal/emotional adjustment should likely be viewed as small, accounting for only 14% of the variance (Cohen, 1988;1992).

The finding that adjustment declined from Time 1 to Time 2, although concerning, is actually consistent with the literature (Tao, Dong, Pratt, Hunsberger, Pancer, 2000; Gall et al., 2000). Interestingly, in the present sample there appears to be some inconsistencies between perceptions of the transition experience and actual adjustment to university. Although their adjustment scores declined, it was interesting to see that women's perceptions of the transition experience did not change significantly. It is possible that women were not aware of the declining adjustment they were experiencing. Indeed, Kerr, Johnson, Gans and Krumrine (2004) found that students who are unable to perceive and discuss their emotions regarding the transition to university experienced poorer adjustment to university as measured by the SACQ. It is certainly possible that some of the women in the present sample did not perceive their adjustment problems and would not, if given the opportunity, have reported them. It is perhaps more plausible, however, that this difference in the pattern of findings reflects the fact that domain-specific *adjustment* to university and *perceptions* of the transition experience, although related, are in fact different constructs. In the case of adjustment indices, students are asked to report on their experiences within specific domains of functioning (e.g., keeping up with academic work, making friends, feeling anxious) whereas in measuring perceptions of the transition experience, students are asked to reflect directly on the nature of their transition (e.g., difficult, challenging). Thus, even though measures of adjustment might decline across the first year of university, perceptions of experience remain similar.

Despite the observation that perceptions of the transition experience and facets of adjustment to university were fairly highly correlated (r 's ranging from .37 to .68), the two constructs behaved in different ways. Average adjustment to university (across all three domains) declined significantly over time and yet the variability in scores across the two time points was highly stable suggesting that women continued to function roughly the same relative to others in the group. In contrast, variability in students' perceptions of the

transition experience was found to be less stable between time points (e.g., evidence of women shifting their relative position in the group from one time point to the next) and on the whole did not significantly change from Time 1 to Time 2. Taken together, these findings support the contention that, like earlier academic transitions (McDougall & Hymel, 1998), if we are to fully assess the transition to university with respect to individual differences in functioning, it becomes important to include a direct measure of experience along with the more traditional indices of domain-specific adjustment.

Considering the times at which data were collected and the all female sample, a decline in adjustment is actually to be expected. Data were collected during the first semester and then again in the second semester of first year. Statistics show that up to 30% of first year students do not continue from first to second year (Student and Enrolment Services, 2003; Wintre et al. 2006). Therefore, students who will eventually drop out are likely to still be present in the sample if the study ends before the beginning of second year (as the present study does). Students who drop out as a result of their poor adjustment or achievement would be expected to score more poorly over the first year, rather than better. In one study concerning the transition to university (Tao et al, 2000), data were collected one month after school began, and then again at the end of the first semester. Tao et al. (2000) found that depression and anxiety increased over time such that students showed significantly worse adjustment over the first semester of university.

Given the time frame of the present study (fall and winter of first year) it is not possible to evaluate whether these declines in adjustment are longstanding or whether, in fact, students (in particular women) would recover as they enter second year. In an examination of this issue, Jackson et al. (2000) used the SACQ to measure adjustment to university and found that adjustment scores improved when measured from the end of year 1 to the end of year 2. In their study, they conducted an extensive comparative analysis after losing approximately 16% of their sample between the end of year 1 and end of year 2 and found that students who remained in the study until its completion did not differ on pre-university levels of depression, stress, self esteem or dispositional optimism from students who did not complete. Attrition (from the study) was related to university adjustment scores at the end of first year. Specifically, students who dropped

out of the study before the second year measurement had significantly lower SACQ scores at the end of the first year than did the students who continued. In addition the same pattern of attrition was found between the second and fourth year SACQ adjustment levels. Therefore, attrition from the study (and perhaps from university) was related to adjustment to university, but not to pre-university levels of psychological adjustment. In the present study, if data had been collected for women during their second year of university, it seems likely that improvements would have been noted in their adjustment scores over time. Following from the work of Jackson et al., however, it also seems likely that improvements noted after first year would occur primarily because many of the poorly adjusted women would drop out of university (and consequently the study) leaving more positively adjusted students (on average) in second year university.

Initially it appears as though the declines in adjustment from the start of university to the end of first year observed in the present study are consistent with the idea of the 'freshman myth' (proposed by Stern in 1966). This myth is characterized by the fact that students have an overly positive idea of what university will be like, and/or an inflated idea of what they will be able to accomplish at university. As reality sets in, and they are unable to do as well as they imagined they would, adjustment declines (Baker et al, 1985). The freshman myth is theoretically seen to play out from the point of pre-university (or early in the first semester) to the end of the first semester and as such may be less applicable in the present study in which students were followed from mid first semester into the end of their second semester. It can be argued that students in the present sample would have already seen some of the reality of university by the middle of first semester. It remains possible however, that the students in the present sample still felt dissatisfied by the gap between how they originally thought they would do, and how they were actually doing over the course of the year (Baker et al. 1985).

Finally, declines in adjustment might well be accounted for by the fact that Time 2 measurement coincided with a particularly difficult time during the semester. Although the two time points were measured at similar junctures during each semester (e.g., approximately 12 weeks into each semester) it is possible that the two semesters are simply not very similar. In first year, many courses are year-long offerings and as such students are not faced with exams in December of first year but rather must contend

with most of their exams towards the end of first year (close to Time 2). In an academic sense, whereas hope for improvement may still be viable in the fall of first year, there is little time to recover by the time March (Time 2) emerges. Accordingly, the workload and stress level that students experience may be very different between first and second semesters. In addition, for many students the end of the second term brings with it the stress of having to find a summer job. In the current study, no specific questions were asked that would support the veracity of a “time of year” explanation for declining adjustment. Future research could investigate adjustment levels in relation to specific university related stressors such as an examination period by trying to directly measure these stressors at relevant time points. Alternatively, it might be of value for future researchers to compare university systems in which first year is characterized by primarily half-year (i.e., 4 month) courses as compared to university systems in which the structure of first year is based entirely on full-year (i.e., 8 month) course offerings. This type of comparison would make a worthwhile contribution to understanding the links between the structure of programming and university adjustment in first year.

4.2 Were there individual differences in adjustment during the first term? Concurrent correlates of adjustment to university

Consistent with predictions and the literature (Gall et al, 2000; Fisher & Hood, 1988), women in the present sample had a more difficult transition and reported greater difficulty adjusting to university as compared to men. Using Cohen’s (1992) standards for effect size, gender was observed to have a medium to large effect size in terms of the amount of variance that was accounted for in university adjustment. The effect size for gender was smaller for self-reports of the transition experience, with only 2% of the variance being explained. On the whole, in the fall of first year men reported fewer difficulties with social and personal/emotional adjustment as compared to women and were more positive in their perceptions of the transition experience. Interestingly, these gender differences did not extend to the realm of academics. Indeed, gender was not related to either reports of academic adjustment or academic achievement (i.e., overall grades). The fact that men and women were similarly adjusted academically during first semester is consistent with previous research (Gall et al. 2000). Specifically, Gall et al. (2000) have argued that although women are not more poorly academically adjusted at

the beginning of the year then men, they are more negatively affected by the transition (Gall et al, 2000). Winter (2006) suggests that there is evidence that women are somewhat more likely to be identified as gifted scholars, and to graduate from university than are men, but they are more likely to withdraw from school for non-academic reasons. The pattern of results in the present study fits with past research, as the women were not more poorly academically adjusted than men in the first term, but were observed to have more difficulty in social and personal/emotional areas. Unfortunately, the low number of men that contributed data at the second time point precluded comparisons of the patterns of adjustment between men and women over time although this should most certainly be an important focus of future research in this area given the strong possibility that women are more vulnerable during the move into university.

In addition to gender differences, the question of whether living at home or moving away from home to attend university would be associated with individual differences in the transition and adjustment to university was investigated. For the most part, living at home versus moving to attend university was not related to different outcomes. Contrary to what was expected, students living away from home were not more poorly adjusted than students living at home and did not report a more difficult or challenging transition experience. In fact, students living away from home demonstrated significantly better social adjustment than students who were living at home, although the size of this effect was small. Effect size notwithstanding, this is a particularly interesting finding because students who move to attend university are typically required to form new social networks for support versus students who live at home who are presumably able to rely on the support network that they are used to (Paul & Brier, 2001; Hays & Oxley, 1986). One study of social support during the transition to university found that students generally reported stable levels of social support during the transition to university, but when the sources of social support were investigated, students relied more heavily on school peers than parents over time (Tao et al, 2000). Although it is likely that the students who moved away from home have had to create new social networks, in the present sample, students appear to have adjusted well in making these new connections. While some studies have reported friendship problems and loneliness in college student samples (Paul & Brier, 2001), in the present study,

social support did not change significantly from Time 1 to Time 2, lending support to the idea that students did not have trouble finding the social support they needed. Hays and Oxley (1986) showed that students are better adjusted when they have good support networks. Moreover, they suggest that good support networks during university include university friends. When students have networks that consist of many non-similar supporters (such as friends who are not attending university) conflict is increased. In the current study, students were not specifically asked about where they were receiving support from. However, the measure of social adjustment asked specifically about university life, and questions about social adjustment at university focus on issues like fitting in, and making as many new friends as one would like. It is quite likely that in a group of students who do not seem to have issues finding the support they need in general, making new university friends was not too difficult and when living away from home (and traditional supports), students may have had an easier time making new like-minded university friendships without trying to balance old and new support networks.

4.3 Relations Between Psychosocial and Physical Health-Related Variables and University Transition

4.3.1 Adaptive coping. Being able to adaptively cope means being able to use whatever type of coping behaviour is best suited to the specific situation. Adaptive coping requires self-control (e.g., controlling one's behaviour), determination (e.g., actively responding to a stressor), and judgment (e.g., deciding on the best response; Kohn, 1996). As predicted, and in accordance with previous research (Kohn & Veres, 2001), in the fall of first year adaptive coping was related to a more positive transition experience and more adaptive copers had higher scores on academic, social, and personal/emotional adjustment. In fact, even after controlling for the effects of other psychosocial and physical health factors, coping adaptively was uniquely linked to positive functioning in all domains with the exception of academic adjustment. Although adaptive coping and academic adjustment were observed to share a bivariate relation, it may well be that in the presence of other predictors, coping is not as critical a predictor of academic adjustment as other variables are, and as such does not account for a significant proportion of the unique variance in academic adjustment. Generally, people who would be identified as more adaptive copers tend to have more self-control and

exhibit good decision making skills. In contrast, poorer copers would tend to be more volatile and more easily shaken across a variety of situations. The measure of adaptive coping is heavily weighted toward interpersonal relations and for that reason may not be as strong a predictor for academic adjustment which measures things like school-related abilities, getting to class, completing assignments. While a high degree of self-control and good decision making skills are possibly essential skills for high achievement in university, the interpersonal focus of the adaptive coping measure most likely attenuates the link between adaptive coping and academic adjustment in the presence of many other related variables. Adaptive coping was uniquely predictive of the less solitary domains of university adjustment namely social and personal/emotional adjustment.

4.3.2 Daily Hassles. Not surprisingly, more daily hassles were connected to perceiving the transition as more difficult and were also inversely related to the three adjustment indices. Specifically, students who reported suffering greater hassles were not doing as well in terms of their academic, social, or personal/emotional adjustment to university during the fall of first year. When predicting individual differences in the transition experience, and in adjustment to university (academic, social, personal/emotional), daily hassles emerged as uniquely predictive across all four measures.

As in the case of adaptive coping, the strong relation that was observed between daily hassles and the outcome measures cannot be interpreted to have causal implications. That is, it is not possible using the present data to say that increased daily hassle based stress is causing poor adjustment or more troubling perceptions of the transition experience. Indeed, it is possible that lower adjustment and trouble with the transition actually leads to increasing hassles, or that some third variable is impacting both variables. For example, it could be that some aspect of an individual's personality (e.g., neuroticism) leads to poorer outcomes during times of change and also increases the experience and reporting of daily hassles. One way for future researchers to sort out the role of daily hassles in the transition to university would be to conduct an intervention study where incoming students were randomly assigned to one of two conditions. In the first condition, students would be exposed to an intervention program that focuses on identifying and reducing daily hassles in an effort to improve the group's ability to handle

university related daily hassles. The second group would act as the control and would not receive any training regarding hassles. If improvements in functioning were noted for the group who receives training and/or instruction regarding daily hassles, we may in fact be one step closer to pinpointing the directionality of the relation between daily hassles and university transition and functioning.

Even without resolving issues of causality and directionality, there is ample evidence in the present study that the measurement of daily hassles represents an important marker of both perceptions of the transition experience and domains of adjustment. This finding, taken from within the context of an academic transition, is in keeping with previous research on the role of daily hassles. Daily hassles have been previously shown to be positively related to anxiety, psychological symptoms, and negative well being in university students (Kohn, Lafreniere, & Gurevich, 1990; 1991) as well as negatively related to university adjustment (Kohn & Veres, 2001).

4.3.3 Social support. It was hypothesized that high levels of social support would be positively related to better adjustment in the first year of university. Previous research has shown that the absence of social support is a risk factor for poor adjustment (Lamothe et al., 1995), whereas the presence of adequate social support appears to buffer people from the effects of stress (Cutrona, & Russell, 1987). In their social support intervention study, Lamothe et al. (1995) showed that higher levels of social support were related to better university adjustment as measured using all four subscales of the SACQ. An expansion and replication of the study showed that students who were randomly assigned to a social support intervention group to increase their social support networks were better adjusted than students who did not receive the intervention, however, they did not assess the SACQ subscales separately (Pratt et al. 2000).

As expected, in the present study, social support was correlated with academic, social, and personal/emotional adjustment to university. In addition social support was also positively related to perceptions of the transition experience. However, when social support was used as a predictor in the regression analyses, social support only emerged as uniquely predictive of social adjustment when alongside psychosocial and physical health factors in the model. Although social support was expected to play a more

prominent role in predicting university adjustment across different adjustment domains during the transition to university, it is certainly plausible that most of the contribution that social support makes in predicting adjustment is shared by other factors. The social support measure used in the present study measures many facets of social support, however it does not identify the source of the social support, and none of the questions are context specific. As such, the social provisions scale represents a global measure of social support. The social adjustment measure mainly assesses the degree to which a student is satisfied with the level of social involvement they have achieved in the university related context. While the two scales measure distinct constructs, there is enough similarity that social support emerged as uniquely predictive for social adjustment even in the presence of a number of other variables.

Among Chinese undergraduates Tao et al. (2000) utilized the same measure of social support and similarly found that while social support was predictive of social adjustment, it was not predictive of academic or personal/emotional adjustment. They concluded that social support was not an equally important predictor of adjustment across the domains. Before ruling out social support as having a more important role in academic adjustment, personal/emotional adjustment, and the nature of the transition experience, it would be interesting to investigate specific aspects of university-related social support during the university transition more closely. In the present study, the source of social support was not assessed. During the transition to university, there are many changes occurring. It is possible that while global reports of social support are positively related to adjustment and perceived transition experience, simply having social support from any source does not actually improve adjustment. Perhaps during the transition to university, having friends that share similar interests such as studying leading up to midterm time would better predict academic adjustment than having supporters for whom academics are not a priority.

4.3.4 Self esteem. As predicted, students who had high self-esteem were better academically adjusted. Similarly, students who had higher self-esteem also reported better transition experiences and demonstrated better social and personal/emotional adjustment. Though self-esteem was significantly related to all of the outcome variables, it was also fairly strongly related to all of the other predictors as well. Not surprisingly,

when all other predictors were controlled in the regressions, self-esteem was only uniquely predictive of personal/emotional adjustment. It seems as though the global measure of self-esteem that was used in this study has restricted utility for predicting individual differences in adjustment during the transition to university. Indeed, while generally speaking, high self-esteem shares positive relations with adjustment (Hertel, 2002; Hickman, Bartholomae, & Patrick, 2000) it is nevertheless a global measure, and as such self-esteem was also related to most variables in the present study. It seems plausible that the intercorrelations with other predictors meant that self-esteem did not emerge as uniquely predictive in more than one domain. Efficiency may dictate that future researchers examining the transition to university may deem self-esteem to be less useful as a specific marker of individual differences in this academic event. Rosenberg et al. (1996) suggest that global self esteem is related to psychological well being while academic-specific self-esteem is a better predictor of school performance.

4.3.5 Health Behaviours and University Adjustment. I hypothesized that health risks (low exercise and high levels of problematic alcohol consumption) would be related to more difficult transition experiences and lower adjustment levels. Unlike the strong support observed for connections between psychosocial factors, transition experience, and adjustment, hypotheses involving health behaviours were only partly supported.

Greater physical activity was related to a more positively perceived transition and better adjustment for the most part. An inspection of zero-order correlations showed that moderately intense physical activity was positively related to all three measures of adjustment to university, but was not related to transition experience. Similarly, vigorous and strength building type physical activity was related to all four outcome measures. In contrast, the bivariate relations involving sports team participation showed only one statistically significant link to better social adjustment during the first semester, although there was a trend toward a significant positive relation with personal/emotional adjustment as well. This pattern of correlations meant that only moderate physical activity and vigorous and strength building activities were included in regression analyses. Even after controlling for the effects of psychosocial factors, vigorous and strength building activities were uniquely predictive of more positive transition experiences, and better academic adjustment. Moderate physical activity was uniquely

predictive of social adjustment. Neither of the physical activity variables utilized in the present investigation was uniquely predictive of personal/emotional adjustment which is surprising given the connections in previous literature that have been made between increased aerobic activities and improved mood and psychological well being (Bray & Kwan, 2006; Callaghan, 2004; Hinkle, 1992; McCann & Holmes, 1984; Statistics Canada, 1999). Also, it was surprising that vigorous and strength building activities were not significantly predictive of social adjustment given that moderate physical activity was.

In this study, moderate physical activity was measured by asking participants 'on how many of the past 7 days did you participate in physical activity for at least 30 minutes that did not make you sweat or breathe hard' followed by examples such as fast walking, slow bicycling, skating, pushing a lawn mower, or mopping floors. For the most part, the question measures physical activities that are a bi-product of daily activities, and many are not overly social in nature, in fact many such as mowing a lawn or walking to school tend to be solitary activities. On the other hand, vigorous and strength building activities consist of the kind of purposeful exercise that one achieves mainly from participating on sports teams or going to the gym and are inherently more social in nature and yet were not found to be uniquely predictive of social adjustment. Part of the discrepancy may be due to the use of self-reported measures of physical activity in this study. Self report measures may not characterize actual physical activities well enough to relay accurate enough information to yield results in a study of this size. In fact, there is evidence that at least in adolescence there is a tendency to under-report moderate physical activity and over-report vigorous physical activity when compared to objective measures which would bias results regardless of sample size (Troped et al. 2007).

Despite the fact that many of the physical activity variables are not coming out exactly as was predicted, for the most part, relations that should probably be present are lacking. In general, both adults and children are found to over-report their actual physical activities on self-report measures (Sallis & Saelens, 2000). The measure used in this study, the NCHRBBS National College Health Risk Behavior Survey, was tested with college students and was shown to have excellent test-retest reliability. The validity of the questions however, is comparable to other self-report measures of physical activity (Dinger, 2003). The intercorrelation between vigorous physical activity and the

accelerometer (an objective measure of physical activity) was only $r=.60$. For moderate physical activity, the accelerometer and the self-report question had a similar correlation $r=.63$. The questions used in the present study were a good choice in terms of a self-report measure of physical activity. Nevertheless, this measure may not characterize actual energy expenditure accurately enough to detect the relations that were hypothesized.

In order to more accurately measure physical activity so that hypotheses involving links to physical health can be effectively tested, future research should attempt to make use of accelerometers. Although more costly for researchers and time consuming for participants, accelerometers measure both vertical and horizontal movement and give a much better estimate of actual energy expenditure than do self-reports of physical activity (Freedson & Miller, 2000). Thus, before ruling out physical activity as a marker of the transition experience and/or a more pervasive link to adjustment in first year, it will be important to implement more exact measurement tools.

The hypothesized relation between problematic alcohol consumption and adjustment received almost no support in the present investigation of the transition to university. More problematic alcohol consumption was related to lower academic adjustment but was not significantly tied to the social or personal/emotional adjustment domains, or to reports of the transition experience. In addition to a bivariate tie to academic adjustment, alcohol consumption was also clearly related to grade point average, suggesting that higher levels of alcohol consumption go along with lower grades. Clearly, the correlational design of the present study makes it impossible to establish with any certainty that drinking more leads to lower grades. At the same time, if in fact lower academic achievement was the cause of more drinking in the fall of first year, one might also expect to see that other likely triggers such as more daily hassles or poor coping would go hand in hand with more problem drinking. That is, one could expect to see students using drinking as a coping strategy to deal with stress. In contrast to this scenario, the present findings yielded no such connection between either daily hassles or adaptive coping and self-reports of alcohol consumption. On the other hand, alcohol consumption was positively related to the number of sports teams that a student is a part of lending support to the idea that in the fall of first year students (at least those

on sports teams) are drinking within a social context. Past research has shown that sports team participation is related to higher levels of social drinking in both high school and university (Eccles and Barber, 1999; Nelson and Wechsler, 2001; Rockafellow & Saules, 2006; Wechsler, Davenport, Dowdall, & Grossman, 1997). This is not to suggest that problematic alcohol consumption has a beneficial influence on the social realm of university. Rather, it seems plausible that students are drinking in social contexts for social reasons. Alcohol consumption though common in social situations does not appear to be an essential part of receiving social support and does not appear to have a relation with overall satisfaction with the social ties one makes during the transition to university. Drinking was not related to the amount of social support students reported or to their reported social adjustment.

In accordance with the present results, Labouvie and Bates (2002) have found fewer negative consequences when students drink for social reasons, than when students drink to cope. Alcohol consumption in the present sample is very common with 83.2% of the sample reportedly drinking. In addition, the average score on the AUDIT was 6.12, not far below the cut off score of 8 that would be considered hazardous or problem drinking. According to Wechsler (1998) drinking alcohol is normative during university, however, even among non-problem drinkers, drinking-related consequences can easily affect grades through missed classes and late assignments due to hangovers. In the present study, it is not surprising that alcohol consumption is positively related to poorer academic adjustment and grades during first year, or that students who are drinking at higher levels are not more poorly adjusted overall than students who aren't drinking as heavily.

4.3.6 Summary. In answering the question of whether there were individual differences in perceptions of the transition experience and in adjustment in the first term of university, it is important to note that certain predictors emerged for some indices but not others. These findings provide evidence that different adjustment constructs were in fact being measured. There is also evidence from the present study to suggest that some of the risk and protective factors (operationalized as psychosocial and physical health factors) considered herein were involved in all domains of university adjustment. Specifically, being a more adaptive copier and having fewer daily hassles emerged

consistently across the adjustment domains and the perceived experience of the university transition early on. Adaptive coping was implicated in three of four domains showing that being a more adaptive copier; that is, knowing what to do and when to do it in a given specific context (Kohn, 1996) was related to better adjustment. Daily hassles emerged consistently across all four outcomes demonstrating that regardless of whether the transition into university is in and of itself a stressful life event, the experience of daily stressors that are part of the transition are negatively related to students' perceptions of the transition and to their adjustment during this time. From a practical standpoint, the design of transition intervention programs should take into account that what might be related to adjustment in one area (e.g., academics) may not necessarily be related to adjustment in all other areas.

Previous research has shown that academic adjustment is very important to university adjustment, but it is not the full picture on its own. While some students drop out of university because they did not meet promotion standards (Winter et al., 2006), many students, even ones in good standing, drop out for other reasons (Winter et al., 2006; Gerdes & Mallinckrodt, 1994). Academic achievement taken alone leaves much of the variance in poor adjustment and subsequent attrition left unexplained (Gerdes & Mallinckrodt, 1994). Social and personal/emotional adjustment predicts attrition as well or better than academic adjustment among students with both low and high academic averages (Gerdes & Mallinckrodt, 1994). In addition, among students with low academic potential, higher levels of overall adjustment and better personal relations were related to persistence in college (Gelso & Rowell, 1967). The present study also highlights the need to consider a direct assessment of how students feel about the transition.

In the present study, the combination of the demographic, psychosocial and health-related behaviours were able to account for a fairly large proportion of variance in the outcomes of interest (ranging from 43% to 62%) obtained in the fall of first year. Nevertheless, there is still quite a bit of variance left to be explained. Future studies may be able to account for more of the variance by incorporating objective measures of physical activity and grades, and also by investigating variables that were not looked at in the present work. In particular, a closer investigation of social networks alongside social support may be beneficial.

4.4 Predicting the Adjustment of Women over the Course of the First Year

Correlations observed between Time 1 psychosocial factors and health behaviours and Time 2 adjustment indices for the smaller sample of female students in large measure replicated the pattern of relations observed concurrently at Time 1. This replication of findings provides support for a number of the present hypotheses.

As predicted, adaptive coping at Time 1 was positively related to all three adjustment indices and perceived transition experiences at Time 2. Similarly, the level of daily hassles in the fall was linked to subsequently lower social, academic and personal/emotional adjustment as well as a more difficult or challenging transition experience by the end of the school year. As was expected, better social support and higher self-esteem for students early on were linked to more positive adjustment and better transition experiences, although the connection between social support and academic adjustment was only a trend. For the most part then, predicted relations between healthier psychosocial functioning at the beginning of the year and better adjustment at the end of first year were obtained for this sample of women.

Although more positive health behaviours (more physical activity and less problem drinking) at Time 1 were expected to be related to more positive transition experiences and higher levels of university adjustment (academic, social, and personal/emotional) at Time 2, these connections were not consistently observed. As in the case of concurrent connections, measures of drinking in the fall were again found to be related to lower academic adjustment at the end of term 1 but were not, contrary to expectations, significantly tied to other domains of adjustment or to reports of the transition experience. Moderate physical activity did not demonstrate significant relations across time with adjustment or transition experience despite the fact that connections to social and personal/emotional adjustment were observed concurrently at Time 1. Unlike the widespread connections observed between vigorous and strength building physical activities and adjustment outcomes at one time point (fall of first year), over the full academic year, level of vigorous and strength building activities was only related to academic adjustment and the transition experience.

In order to fully test whether psychosocial and health related variables at Time 1 would be predictive of academic, social, and personal/emotional adjustment as well as

perceptions of the transition experience at Time 2, it was necessary to control for early measures of each respective adjustment measure. Failing to do so, could lead to inaccurate results and conclusions that do not take earlier adjustment into consideration.

Although longitudinal consideration was limited to a small sub-sample of first year women, it was extremely interesting to note how much the of the variability in adjustment and perceptions of the transition experience at the end of first year could be accounted for simply by knowing about these same factors at the start of the school year. Indeed, 2/3 of the variability in adjustment domains (academic, social, personal/emotional) and almost half of the variability in perceptions of transition experience reported at Time 2 could be accounted for by measures of these same indices at Time 1. That is, knowing how women were doing in the fall of first year carried a great deal of weight with respect to predicting how they would be functioning at the end of the year. The high degree of stability in functioning (relative to others in the group) across time seems to suggest that the indices of adjustment utilized in the present study may be tapping into more stable traits that individuals possess as opposed to measuring the impact of the context (e.g., the transition to university). With only two points of measurement, it is not possible to verify whether this is in fact the case. One way to examine the notion of trait stability would be to collect adjustment measures in the fall and spring of grade 12 prior to entering university. With this kind of information it would be possible to examine whether certain individuals are simply better adjusted to begin with, and in that way, would seem to begin university with a “head start”. It is interesting to note that perceptions of the transition experience appeared to be more variable over time (reflected by lower stability coefficients). If a “trait-like” explanation can account for the variance in adjustment indices being moderately to highly stable, it should similarly be implicated in the more global measure of how the nature of the transition is being perceived. At the same time, given that the measure of transition experience was designed to ask explicitly about what was going on in the move into university (i.e., asking questions about the impact of the context on the individual), it would be reasonable to expect more variability in these reports of transition experience and less of a role for stable traits.

The fact that adjustment at Time 2 could in large part be predicted by knowing about the same measure of adjustment at Time 1 has implications for intervention.

Potentially, the SACQ could be administered to students during the first semester to identify students who are at risk of having difficulty, and to identify their problem areas. Interventions could then be tailored to each student. A similar intervention has been conducted with success. Specifically, Baker and Siryk (1986) found that among students who scored poorly on the SACQ during first semester, the implementation of one intervention interview improved student adjustment and reduced drop out rates. The interview included reviewing the students' SACQ scores and discussing possible ways of dealing with the difficulties the student was experiencing as well as providing information about helpful resources.

The stability of variance in adjustment domains and perceptions of the transition experience over time also had implications for the test of hypotheses involving psychosocial factors and physical health behaviours used to predict transition experience and adjustment longitudinally. After controlling for early adjustment and transition experience, none of the psychosocial factors or health behaviour predictors collected in the fall of first year was predictive of a significant increment in variance accounted for at the end of the year. As outlined earlier, this would suggest that after controlling for the stability of adjustment, no significant proportion of the fluctuation in adjustment over time could be accounted for with the current set of predictors. As a group, females were observed to decline in their reported adjustment (social, academic, and personal/emotional), but there was a great deal of stability between individuals. The declines in adjustment were surprisingly uniform with the vast majority of the group declining systematically from Time 1 to Time 2 regardless of their starting point. Therefore for the most part, women maintained their relative order within the group. When much of the variability in adjustment at the end of first year can be accounted for by knowing about adjustment at the start of the year, it makes the prediction of individual differences in adjustment across first year more difficult; there is simply a smaller proportion of variability left unaccounted for.

It is certainly conceivable that the set of psychosocial and health behaviours included in the present investigation were not sufficiently central so as to maintain a connection to adjustment over time (over and above fall adjustment). At the same time, given that such a small sample was available for exploration of longitudinal relations, it

seems entirely premature to rule out the possible importance of the current set of psychosocial and health behaviours before conducting a replication with a larger sample that would yield more generalizable results. Although, the number of participants meets the requirements of the rule of thumb laid out by Harris (1985) that N should exceed the number of predictors by at least 50 (as cited in Howell, 2002), or a second rule of thumb that is often followed stating that a sample should consist of the number of predictors multiplied by 10 (Howell, 2002), there can be little doubt that the small sample available for these analyses imposed power restrictions that made tests of the increase in variance accounted for overly restrictive. Indeed, an inspection of the incremental proportion of variance (ranging from 4% to 10%) across adjustment indices as well as the perceived transition experience provides support for an attempted replication with more participants and better power.

Future attempts to examine this same (or expanded) set of psychosocial and health behaviours must also go beyond the present data by including males in the sample. Indeed, at present, the current findings regarding the longitudinal prediction of adjustment and experience over the first year of university are limited exclusively to women.

4.5 Changes in risk and protective factors: Health behaviours.

One of the secondary goals in the present study was to investigate whether changes in women's health behaviours over the first year of university were related to their adjustment to university. Of all the health behaviours under consideration, only moderate physical activity changed significantly across the first year, increasing slightly from Fall to Spring. Of interest was whether changes in risk and protective factors would be predictive of difficulty during the first year of university. Though previous research suggests that health behaviours change (Hudd et al., 2000), and on average physical activity has a tendency to decline over the first year of university (Bray & Born, 2004), for the most part participants in the present study showed little change in health behaviours. It is possible that by measuring health behaviours 12 weeks into the first semester, I missed the majority of the changes that occurred between high school and university, but it is also possible that the measures used (as previously discussed) were not sensitive enough to detect the actual changes occurring.

Although the changes in health behaviours were not significant over the year, I looked at the relations among these changes and transition experience and adjustment at Time 2. There was a non-significant trend between increased vigorous and strength building physical activities and decreased academic adjustment and transition experience. This trend was unexpected and counterintuitive although it is possible that increasing the time spent in vigorous and strength building activities simply leaves less time available for academic pursuits. Given the small sample size, the impact of changes in physical activity on university adjustment must be re-examined in a larger sample in order to clarify the association between this kind of change and university adjustment in transition.

There was also a marginally significant association observed between increases in sports team participation and increases in alcohol consumption. Existing literature would support the idea that in university, sports team participation and alcohol consumption are positively related (Rockafellow & Saules, 2006; Vickers et al. 2004) so it should not be particularly surprising that increases in one domain tend to correspond with increases in another.

4.5.1 Understanding interconnections between psychosocial factors, health behaviours and university adjustment. As predicted, coping adaptiveness was concurrently related to daily hassles such that better coping went hand in hand with fewer hassles. Consistent with what was predicted, in the fall of first year adaptive coping was positively related to both social support and physical activity (moderate, vigorous and strength building, and sports team participation). Contrary to expectation, adaptive coping was not significantly tied to problematic alcohol consumption. The lack of relation does suggest that the students in the present sample are not drinking to cope with stress for the most part.

Contrary to the hypothesized relations and to the literature (Hudd et al., 2000; Salmon 2000), daily stress in the present study was not significantly related to health behaviours. Specifically, daily hassles were not significantly related to problem drinking or to any measure of physical activity. While it is possible that daily hassles are not related to physical activity, it is also possible that daily hassles were not related to physical activity in the present study because a self-report measure of physical activity

was utilized. As previously discussed, self report measures of physical activity may not measure actual energy expenditure well enough to detect the relations that I had hypothesized.

4.6 *Do daily hassles act as a mediator?*

In the present investigation, three mediational hypotheses were proposed for daily hassles based on relations identified in the literature. Although the sample size (and restriction to women only) did not allow for the test of these mediational hypotheses with longitudinal data, these linkages were nevertheless explored in a concurrent context. First, it was predicted that adaptive coping would be directly related with adjustment to university as well as being indirectly related following a path through daily hassles. Using the Baron and Kenny (1986) method for testing mediation, and Sobel's (1982) method to test the significance of the entire path, this hypothesis was supported. During the first semester of university, adaptive copers report better adjustment in part because adaptive coping reduced daily hassles, which in turn, was connected to better adjustment to university.

Similarly, it was hypothesized that social support would share a direct relation with adjustment to university and also an indirect relation mediated through daily hassles. Although all of the required relations specified by Barron and Kenny (1986) were met, the entire path was not significant and, thus, the hypothesis regarding daily hassles as a mediator was not supported. It is possible that the variables are related in a different way (i.e., moderating versus mediating) or that both hassles and social support are each only directly related to adjustment.

The final mediational hypothesis, that health behaviours would be directly related to adjustment and also indirectly related through daily hassle based stress was not supported. Contrary to literature on stress and physical activity (Hudd et al, 2000; Skirka, 2000), in this study, physical activity and stress (daily hassle based stress) were not significantly correlated. There are two main reasons that may explain the lack of the expected relation. First, participants in this sample may not be exercising enough to benefit from the stress reducing or protective benefit of exercise. Skirka (2000) found a difference between students on perceived stress and daily hassles based on physical activity. In that study, the non-exercising students worked out two times per week or

less, while members of the exercising group belonged to university sports teams, and were involved in a regular training program (Skirka, 2000). Second, the measure used may not be sensitive enough (as previously discussed) for use in smaller studies, even though it is sensitive enough to detect a relation between stress and physical activity in larger studies (where the actual effect size can be very small and still be detected).

4.7 Limitations

4.7.1 Attrition. There was a substantial attrition rate, especially among the men in this study. Although the transition to university appears to be particularly difficult for women, originally longitudinal hypotheses involving men were postulated. The reduced numbers of men at Time 2 limited my ability to conduct comparisons of men and women at Time 2, and also to comment on the longitudinal transition experience and adjustment of men. Having lower participant numbers at Time 2 also places limitations on the conclusions that can be drawn from the present study. Whether the high attrition rate was in part a result of actual attrition from university between the first and second semesters can not be determined, as I do not have permission to access student records. Given that 68% of the students who completed the Time 1 questionnaire did not contribute data at Time 2, most of the attrition is likely related to dropping out of the study, and not from dropping out of school. It is highly probable that a high proportion of the students who did not complete Time 2 had already earned all of their bonus marks for their introductory psychology course, and therefore were no longer motivated to complete the second questionnaire. Though I did not ask questions that specifically pertained to motivation, data that was collected concerning adjustment and achievement were tested for differences between students who contributed the full complement of data and those that contributed data at Time 1 only. There were no significant differences on Time 1 measures of grades, transition experience, or adjustment indices (academic, social, personal/emotional) between the students who completed the study (both men and women) and those who did not. This suggests that early achievement was not related to attrition from the study. Similarly, the women who completed data at both time points were compared to those who did not, and again no significant differences were found. Therefore, better adjusted students or higher achievers are not likely over or under represented at Time 2.

A higher proportion of men dropped out the study than was expected. Specifically, although there was an expected count of 16 men for Time 2, only 7 actually contributed data. To my knowledge there is no systematic reason as to why a greater proportion of men would have dropped out than women. The low numbers of men who completed data at Time 2 reduced the feasibility of an attrition analysis involving men only. With such low numbers, even if there were differences between the men who completed and the men who did not, they would be likely to go undetected. By excluding men from all analyses involving Time 2, systematic undetected biases of the results are avoided. In the current study, it is probable that the high attrition rate is an artifact of the study structure (as described in the next section).

4.7.2 Online data collection. There are pros and cons to collecting data online. Online data collection provides easy 24 hour access to students who wish to participate in the study. The online questionnaire format was beneficial for students in that they did not have to schedule and attend an appointment; they only had to log on at their convenience. There is some evidence that students feel more at ease answering questions about sensitive subjects, such as problematic alcohol consumption, online rather than in person (Yi-Ching Wang, 2005). For the researcher, online data collection works well in that the researcher also does not need to be present at scheduled appointments. Online data collection is a time- and cost-effective data collection mode.

The main problem associated with collecting data online, however, is that it is up to each student to read and retain the information given to them in writing. When a study is conducted in person, normally the researcher would give instructions verbally and in writing. It could be possible that students did not notice or remember that the study consisted of two time points (Fall and Winter). Even though this study was longitudinal, there was no additional benefit for the students to take part in both waves of data collection. They were awarded their incentive bonus points for each part (Time 1 and Time 2) separately as though it were two separate studies (students could not participate at Time 2 if they had not participated at Time 1). Since I did not explain the importance of completing both halves of the study to them in person, and the incentive scheme did not draw attention to the longitudinal nature of the study, participants may not have fully understood the importance of participating at both time points. It is also

possible that students did not plan to do the second half, but rather, completed their bonus credits during first semester (by participating in unrelated studies). During second semester, three reminder emails were sent to increase participation at Time 2, but for those who had already achieved all eligible bonus marks and were not interested in the chance to win a gift certificate, completing the study held no benefit.

In future, to offset low retention rates, I would attempt to recruit a larger number of participants at the beginning. I would also look into the possibility of running the study not as two separately credited halves but as a longitudinal study, where the credits are awarded at the end of the study. Technically, participants may drop out of a study at any time and receive full credit for participation. However, if the study credits were presented in a format that matched the longitudinal nature of the study, it may increase retention by drawing attention to the study length. If students were more aware of the importance of both parts of the study, they may have planned to complete the second half.

4.8 Implications for Intervention

In the present sample, it was quite surprising to see such a high proportion of under-age alcohol consumers. Moreover, one third of the present sample reported levels of alcohol consumption that place them at risk. Of the students scoring an 8 or higher on the AUDIT, 61% are under the legal drinking age. While drinking alcohol appears to be a normative behaviour in university and is associated with social activities, drinking at a hazardous level is associated with future alcohol related complications (Saunders et al., 1993; Conigrave, Hall & Saunders, 1995). In the present study more problematic alcohol consumption was associated with poorer grades and poorer academic adjustment at both Time 1 and Time 2. There was no significant difference between students who were of legal age to drink and students under the legal drinking age in terms of the proportion of problem drinkers. There appears to be a need to address problematic alcohol consumption and to promote harm reduction among first year students. The AUDIT, although useful in research, is also a tool for identifying individuals for interventions (Barbor, 2001). Students identified by the AUDIT as hazardous drinkers could be targeted for intervention. According to Kurt et al. (2006), brief motivational interview type interventions reduce both the number of drinks consumed per episode and also the frequency of intoxication among college students. By reducing the amount

of frequency of alcohol consumption, the harms associated with over-consumption could be avoided.

The results of the present study suggest that at least for women, some students experience adjustment difficulties during first year of university, and that these adjustment struggles become worse over the year. Student adjustment may be improved through interventions that target the specific issues that first year student's face. Student's who score more poorly on the SACQ may benefit greatly from individual interventions where their specific issues are discussed, and advice is tailored to meet individual needs (Baker and Siryk 1986).

4.9 Conclusions

The present study supports the idea that for at least some students the transition to university is a stressful life event. Individual resources (psychosocial factors and health behaviours) provide information about why some students are better able to deal with the university transition than others. Past research has demonstrated that interventions into the areas such as social support and adjustment have been beneficial.

In future research, psychosocial variables, health behaviours and adjustment to university should be further investigated in a larger mixed-gender sample. Furthermore the use of objective measures where possible may account for more variance in the prediction of transition experience and adjustment in future studies. Consent to access grade point averages and attrition statistics from student records for the participants in future studies would enable researchers to look more closely at the link between academic achievement and the study variables as well as to relate actual attrition to adjustment. Measures of physical activity obtained through the use of accelerometers may increase the ability to detect relations between stress and health and to test mediating relations involving those constructs. Finally, collecting data about social support networks in addition to social support would help to further explain the relationship between students and their friends during a life transition and perhaps have implications for improving social support based interventions for university students.

5. References

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Appendix A

Demographic and Background Characteristics

The following questions will collect some background information about you. The answers to these questions will not be used to identify you.

How old are you?

- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25

What is your gender?

- Male
- Female

So far, in university, what grades do you usually get?

- A+ (90%-100%)
- A (80%-89%)
- B (70%-79%)
- C (60%-69%)
- D (50%-59%)
- Less than D (below 50%)

What is your current living arrangement?

- On campus student residence
- Off campus housing
- At home (with family)
- Other, Please explain _____

If you are not living at home, how long does it take to drive home?

- Less than 30 minutes
- 30 minutes to 1 hour
- Between 1 and 3 hours
- Between 3 and 5 hours
- More than 5 hours
- My home can not be reached by car

Appendix B

Personal Functioning Inventory

This questionnaire is about individual styles of dealing with personal problems. Each item below concerns some aspect of your personal approach to such problems.

There are no right or wrong answers except in terms of their accuracy in conveying how *you* deal with your problems. Therefore, for each statement below, please put the number in the slot to the right which best reflects how much you agree or disagree with that statement.

1 = Strongly Disagree; 2 = Disagree; 3 = Unsure; 4 = Agree; 5 = Strongly Agree

1. I have no trouble staying calm during differences of opinion with my friends.
- *2. Even remotely possible threatening events worry me.
3. I don't get too upset by the occasional social rejection.
- *4. I tend to worry too much about my problems, even ones which eventually go away by themselves.
- *5. If I think somebody wants to harm me, I often lose my cool.
6. I can relax and enjoy myself even when waiting to find out about something important.
7. I've learned not to get down on myself for minor mistakes I make.
- *8. The personal limitations of people I deal with often exceed the limits of my patience.
- *9. When my rights are threatened, I get too upset to act in the most effective way.
- *10. When things go badly, I find it hard to avoid even worse disaster.
- *11. I often lose my cool and detachment in dealing with interpersonal issues.
12. I resist getting bitter over minor slights by others.
13. I rarely permit criticism to make me angry.
14. When my productivity at work/school wavers or falls, I try to keep my cool.
- *15. I can't stop dwelling on people's criticism of me, whether it seems valid or not.
16. I keep my temper under control in business negotiations.
- *17. I've been known to magnify my personal problems beyond their real level of seriousness.
- *18. When I'm waiting to find out about something important, I just can't get it out of my mind.
19. I try to be fully informed and thoughtful about the choices I have to make.

*20. Past embarrassments tend to haunt me for a long time.

21. I generally stay cool, even when I think somebody else wants to harm me.

*22. I often find it impossible to control my anger.

23. I generally learn from my mistakes more than I let them upset me.

*24. Quite often, being emotionally upset impairs my dealing with major problems in my life.

25. I rarely permit others to manipulate my anger to their own ends.

*26. I'm not very practical in dealing with everyday problems.

27. Minor physical ailments don't upset me much.

28. If I can't control whether something bad is going to happen, I try not to worry about it.

29.. I try to be calm and fair in dealing with interpersonal issues.

*30. Under pressure, I tend to make hasty decisions.

*Asterisked items should be recoded before scoring: Thus, 1 becomes 5, 2 becomes 4, 3 remains 3, 4 becomes 2, and 5 becomes 1.

Appendix C

Inventory of College Students' Recent Life Experiences (ICSRLE)

Following is a list of experiences which many students have some time or another. Please indicate for each experience how much it has been a part of your life over the past month. Put a "1" in the space provided next to an experience if it was not at all a part of your life over the past month; "2" for an experience which was only slightly part of you life over that time; "3" for an experience which was distinctly part of your life; "4" for an experience which was very much a part of your life over the past month.

Intensity of Experience over Past Month

1= not at all part of my life

2= only slightly part of my life

3= distinctly part of my life

4= very much part of my life

1. Conflicts with boyfriends/girlfriends/spouse's family
2. Being let down or disappointed by friends
3. Conflict with professor(s)
4. Social rejection
5. Too many things to do at once
6. Being taken for granted
7. Financial conflicts with family members
8. Having your trust betrayed by a friend
9. Separation from people you care about
10. Having your contributions overlooked

11. Struggling to meet your own academic standards
12. Being taken advantage of
13. Not enough leisure time
14. Struggling to meet the academic standards of others
15. A lot of responsibilities
16. Dissatisfaction with school
17. Decisions about intimate relationship(s)
18. Not enough time to meet your obligations
19. Dissatisfaction with your mathematical ability
20. Important decisions about your future career
21. Financial burdens
22. Dissatisfaction with your reading ability
23. Important decisions about your education
24. Loneliness
25. Lower grades than you hoped for
26. Conflict with teaching assistant(s)
27. Not enough time for sleep
28. Conflict with your family
29. Heavy demands from extracurricular activities
30. Finding courses too demanding
31. Conflicts with friends
32. Hard effort to get ahead
33. Poor health of a friend
34. Disliking your studies

- 35. Getting “ripped off” or cheated in the purchase of services
- 36. Social conflicts over smoking
- 37. Difficulties with transportation
- 38. Disliking fellow student(s)
- 39. Conflicts with boyfriend/girlfriend/spouse
- 40. Dissatisfaction with your ability at written expression
- 41. Interruptions of your school work
- 42. Social isolation
- 43. Long waits to get service (e.g., at banks, stores, etc.)
- 44. Being ignored
- 45. Dissatisfaction with your physical appearance
- 46. Finding course(s) uninteresting
- 47. Gossip concerning someone you care about
- 48. Failing to get expected job
- 49. Dissatisfaction with your athletic skills

Appendix D

Rosenberg Self-Esteem Scale

For the next ten questions please indicate whether you Strongly agree, Agree, Disagree, or Strongly Disagree with each statement.

1. On the whole, I am satisfied with myself.
2. At times I think I am no good at all.
3. I feel that I have a number of good qualities.
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of.
6. I certainly feel useless at times.
7. I feel that I am a person of worth, at least on an equal plane with others.
8. I wish I could have more respect for myself.
9. All in all, I am inclined to feel that I am a failure.
10. I take a positive attitude toward myself.

Appendix E

Alcohol Use Disorders Identification Test (AUDIT)

1. How often do you have a drink containing alcohol?

- Never
- Monthly or less
- 2-4 times per month
- 2-3 times per week
- 4 or more times per week

2. How many drinks do you have on a typical day when you are drinking?

- 1 to 2 drinks
- 3 to 4 drinks
- 5 to 6 drinks
- 7 to 9 drinks
- 10 or more drinks

3. During the last 2 months, how often did you have five or more drinks on one occasion?

- Never
- Less than once a month
- About once a month
- About once a week
- Daily or almost daily

4. How often during the last 2 months have you found that you were not able to stop drinking once you had started?

- Never
- Less than once a month
- About once a month
- About once a week
- Daily or almost daily

5. How often during the last 2 months have you not done things you were supposed to do because of drinking?

- Never
- Less than once a month
- About once a month
- About once a week
- Daily or almost daily

6. How often during the last 2 months have you needed a first drink in the morning to get yourself going after a heavy drinking session?

- Never
- Less than once a month
- About once a month
- About once a week
- Daily or almost daily

7. How often during the last 2 months have you had a feeling of guilt or remorse after drinking?

- Never
- Less than once a month
- About once a month
- About once a week
- Daily or almost daily

8. How often during the last 2 months have you been unable to remember what happened the night before because you had been drinking?

- Never
- Less than once a month
- About once a month
- About once a week
- Daily or almost daily

9. Have you or someone else been injured as a result of your drinking?

- No
- Yes, but not in the last 2 months
- Yes, during the last 2 months

10. Has a relative or friend or doctor or other health care worker been concerned about your drinking or suggested you cut down?

- No
- Yes, but not in the last 2 months
- Yes, during the last 2 months

Appendix F

Physical activity questions from the CDC National College Health Risk Behaviour Survey-physical activity questions.

The following 5 questions ask you about physical activity. Answer each question by indicating what you do.

1. On how many of the past 7 days did you exercise or participate in physical activity for at least 20 minutes that made you sweat and breathe hard, such as basketball, soccer, running, swimming laps, fast bicycling, fast dancing, or similar aerobic activities?

0 days
1 day
2 days
3 days
4 days
5 days
6 days
7 days

2. On how many of the past 7 days did you participate in physical activity for at least 30 minutes that did not make you sweat or breathe hard, such as fast walking, slow bicycling, skating, pushing a lawn mower, or mopping floors?

0 days
1 day
2 days
3 days
4 days
5 days
6 days
7 days

3. On how many of the past 7 days did you do exercises to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?

0 days
1 day
2 days

3 days
4 days
5 days
6 days
7 days

4. During a normal week, how many hours per day do you watch television and videos, or play computer or video games before or after school?

None
1 hour or less
2 to 3 hours
4 to 5 hours
6 or more hours

5. During the past 2 months, on how many sports teams did you play? (Include any teams run by your school or by community groups.)

0 teams
1 team
2 teams
3 or more teams

Appendix G

Assessment of the Transition Experience

The following five questions ask you to assess how your transition to university is going.

Please rate your experience on a scale from “1” to “5”.

1. How happy are you about your first month of University?

1=very happy

2

3

4

5=not at all happy

2. Do you feel your first month of University has been successful?

1=very successful

2

3

4

5=not at all successful

3. How difficult was it for you to change schools this year?

1=very easy

2

3

4

5=very hard

4. How stressful was it for you to change schools this year?

1=not at all stressful

2

3

4

5=very stressful.

5. How challenging has the transition to university been for you?

1=not at all challenging

2

3

4

5=very challenging

Appendix H

Student Adaptation to College Questionnaire

For each statement, please encircle one number at the point along the continuum which best represents your judgment concerning how closely the statement applies to you at the present time (i.e., within the last several days). Please be sure to answer every item and do not circle more than one number per item.

Note: Item subscales are identified by the letter at the end of the sentence.

Applies very closely to me

Doesn't apply to me at all

1 2 3 4 5 6 7 8 9

S= Social Adjustment P= Personal/Emotional A=Academic Adjustment

1. I feel that I fit in well as part of the University of Saskatchewan environment. (S)
2. I have been feeling tense or nervous lately. (P)
3. I have been keeping up to date on my academic work. (A)
4. I am meeting as many people, and making as many friends, as I would like at the University of Saskatchewan. (S)
5. I know why I'm in University and what I want out of it. (A)
6. I am finding academic work at the University of Saskatchewan difficult. (A)
7. Lately I have been feeling blue and moody a lot. (P)
8. I am very involved in social activities in university. (S)
9. I am adjusting well to university. (S)
10. I have not been functioning well during examinations. (A)
11. I have felt tired much of the time lately. (P)
12. Being on my own, taking more responsibility for myself, has not been easy. (P)
13. I am satisfied with the level at which I am performing academically. (A)

14. I have had informal personal contact with professors. (S)
15. I am pleased now about my decision to go to university.
16. I am pleased now about my decision to attend the University of Saskatchewan in particular. (S)
17. I am not working as hard as I should at my coursework. (A)
18. I have several close social ties at the University of Saskatchewan. (S)
19. My academic goals and purposes are well-defined. (A)
20. I haven't been able to control my emotions very well lately. (P)
21. I am not really smart enough for the academic work I am expected to be doing now. (A)
22. Lonesomeness for home is a source of difficulty for me right now. (S)
23. Getting a university degree is very important to me. (A)
24. My appetite has been good lately. (P)
25. I haven't been very efficient in the use of study time lately. (A)
26. I enjoy living in a university residence (please omit if you do not live in a residence; any university housing should be regarded as a residence). (S)
27. I enjoy writing papers for courses. (A)
28. I have been having a lot of headaches lately. (P)
29. I really haven't had much motivation for studying lately. (A)
30. I am satisfied with the extracurricular activities available at the University of Saskatchewan. (S)
31. I've given a lot of thought lately to whether I should ask for help from the ----- centre or from a psychotherapist outside of the University. (P)
32. Lately, I have been having doubts regarding the value of a university education. (A)

33. I am getting along very well with my roommate(s). (please omit if you do not have a roommate). (S)
34. I wish I were at another college or university rather than the University of Saskatchewan.
35. I've put on (or lost) too much weight recently. (P)
36. I am satisfied with the number and variety of courses available at the University of Saskatchewan. (A)
37. I feel that I have enough social skill to get along well in the university setting. (S)
38. I have been getting angry too easily lately. (P)
39. Recently, I have had trouble concentrating when I try to study. (A)
40. I haven't been sleeping very well. (P)
41. I'm not doing well enough academically for the amount of work I put in. (A)
42. I am having difficulty feeling at ease with other people at the University of Saskatchewan. (S)
43. I am satisfied with the quality or caliber of courses at the University of Saskatchewan. (A)
44. I am attending classes regularly. (A)
45. Sometimes my thinking gets muddled up too easily. (P)
46. I am satisfied with the extent to which I am participating in social activities at the University of Saskatchewan. (S)
47. I expect to stay at the University of Saskatchewan for a bachelor's degree.
48. I haven't been mixing too well lately with individual's I might normally be attracted to. (S)
49. I worry a lot about my university expenses. (P)
50. I am enjoying my academic work at the University of Saskatchewan. (A)
51. I have been feeling lonely a lot at the University of Saskatchewan. (S)

52. I am having a lot of trouble getting started on homework assignments. (A)
53. I feel I have good control over my life situation at the University of Saskatchewan.
54. I am satisfied with my program of courses for this semester. (A)
55. I have been feeling in good health lately. (P)
56. I feel I am very different from other students at the University of Saskatchewan in ways I don't like. (S)
57. On balance, I would rather be at home than here. (S)
58. Most of the things I am interested in are not related to any of my coursework at the University of Saskatchewan. (A)
59. Lately, I have been giving a lot of thought to transferring to another university.
60. Lately, I have been giving a lot of thought to dropping out of university altogether and for good.
61. I find myself giving considerable thought to taking time off from university and finishing later.
62. I am satisfied with the professors I have now in my courses. (A)
63. I have some good friends or acquaintances at the University of Saskatchewan with whom I can talk about any problems I may have. (S)
64. I am experiencing a lot of difficulty coping with the stresses imposed upon me in university. (P)
65. I am quite satisfied with my social life at the University of Saskatchewan. (S)
66. I am quite satisfied with my academic situation at the University of Saskatchewan. (A)
67. I feel confident that I will be able to deal in a satisfactory manner with future challenges here at the University of Saskatchewan.

Appendix I
For the opportunity to win a gift certificate
CONSENT FORM

*You are invited to participate in a study entitled **The Transition to University: Adaptation and Adjustment**. Please read this form carefully, and feel free to contact the researchers if you have any questions.*

Researcher(s): Melanie Smith (MA candidate) Department of Psychology, University of Saskatchewan, 966-6665 and Dr. Patricia McDougall, Ph.D., Department of Psychology, University of Saskatchewan, 966-8957.

Purpose and Procedure: The purpose of this study is to investigate whether certain protective/risk factors such as daily hassles, self-esteem, and social support predict student's adjustment to university. Students who participate in the study will complete the questionnaire online. This survey will take approximately 30 minutes of your time. We ask that you include your NSID so that if you completed the first survey the information collected first semester can be matched with your second survey. Upon completing your questionnaire, the goals of the study will be fully explained in writing and you will be offered the opportunity to receive a summary of the findings. You will have a chance to win a gift certificate from Future Shop or the Campus Book Store. Winners of the draws will be contacted so that they can pick up their prize.

Potential Risks: There are no known risks associated with participation in this study. However, some students may feel that they would like to talk to someone about some issues that are raised by the questionnaire. On campus there are many centres where students can go to talk to someone about any difficulties that they may be having. The Student Health Centre is in Room 145 Saskatchewan Hall (966-5768). The Student Help Center is located in Room 27 of Place Riel (966-6981) and the Writing Center can be reached at 966-5486. You have the right to withdraw from the study at any time; there are no penalties for doing so.

Potential Benefits: There are no direct personal benefits associated with participation in this study other than a chance to win one of three gift certificates in October and then again in January. Although personal benefits and/or benefits for the greater community are not guaranteed, developing a better understanding of the transition to university may eventually help students better survive their first year.

Storage of Data: The data that are collected in connection with this study will be stored with Patti McDougall and Melanie Smith during the course of the study, and on CD's kept by both researchers for a period of five years.

Confidentiality: The findings from this study will be used in completion of a Masters Thesis project. They may also be published in a scholarly journal and presented at a scholarly conference. However, the data will be reported in aggregate form and it will not be possible to identify individuals. Participant's NSID numbers and contact information will be removed from the data and replaced with an identification number (different from the NSID number) so that

individual data can not be identified by anyone other than the two primary researchers. The list of NSID numbers, contact information, and identification numbers will be kept in a secure and locked location. The master list of NSID numbers, contact information, and identification numbers will be destroyed once the data from both parts of the study have been linked.

Right to Withdraw: You may withdraw from the study for any reason, at any time, without penalty of any sort (and without loss of relevant entitlements, without affecting academic or employment status, without losing access to relevant services etc). You also have the right to leave individual questions blank. If you withdraw from the study at any time, you are free to contact the researchers and request that the data you have contributed be destroyed. Your consent to participate will be sought at the beginning of both the first and second questionnaires.

Questions: If you have any questions concerning the study, please feel free to contact the researchers at the numbers provided above. This study has been approved on ethical grounds by the University of Saskatchewan Behavioural Sciences Research Ethics Board on (insert date). Any questions regarding your rights as a participant may be addressed to that committee through the Office of Research Services (966-2084). Out of town participants may call collect. At the end of the second questionnaire, there is a question that asks if you would like to receive a summary of the results of this study. If you indicate that you would like to receive such a summary, one will be emailed to you. In addition you may contact the investigators using the contact numbers to request a study summary.

Consent to Participate: I agree to consent to this study, having read and understood the background and procedure. I understand that I am free to withdraw from this study at any time and this will in no way affect my academic status. By checking the “AGREE TO PARTICIPATE” box below, you are consenting to participate in this study. If you choose not to participate, please check “DO NOT AGREE TO PARTICIPATE” and exit the questionnaire

Agree to Participate

Do Not Agree to Participate

For bonus marks
CONSENT FORM

*You are invited to participate in a study entitled **The Transition to University: Adaptation and Adjustment**. Please read this form carefully, and feel free to contact the researchers if you have any questions.*

Researcher(s): Melanie Smith (MA candidate) Department of Psychology, University of Saskatchewan, 966-6665 and Dr. Patricia McDougall, Ph.D., Department of Psychology, University of Saskatchewan, 966-8957.

Purpose and Procedure: The purpose of this study is to investigate whether certain protective/risk factors such as daily hassles, self-esteem, and social support predict student's adjustment to university. Students who participate in the study will complete the questionnaire online. This survey will take approximately 30 minutes of your time. We ask that you include your NSID so that if you completed the first survey the information collected first semester can be matched with your second survey. Upon completing your questionnaire, the goals of the study will be fully explained in writing and you will be offered the opportunity to receive a summary of the findings. You will receive 1 bonus credit towards your Psychology 110.6 final mark.

Potential Risks: There are no known risks associated with participation in this study. However, some students may feel that they would like to talk to someone about some issues that are raised by the questionnaire. On campus there are many centres where students can go to talk to someone about any difficulties that they may be having. The Student Health Centre is in Room 145 Saskatchewan Hall (966-5768). The Student Help Center is located in Room 27 of Place Riel (966-6981) and the Writing Center can be reached at 966-5486. You have the right to withdraw from the study at any time; there are no penalties for doing so.

Potential Benefits: There are no direct personal benefits associated with participation in this study other than receiving 1 bonus credit towards your grade for Psychology 110.6 in October and then a second bonus credit for participating again in January. Although personal benefits and/or benefits for the greater community are not guaranteed, developing a better understanding of the transition to university may eventually help students better survive their first year.

Storage of Data: The data that are collected in connection with this study will be stored with Patti McDougall and Melanie Smith during the course of the study, and on CD's kept by both researchers for a period of five years.

Confidentiality: The findings from this study will be used in completion of a Masters Thesis project. They may also be published in a scholarly journal and presented at a scholarly conference. However, the data will be reported in aggregate form and it will not be possible to identify individuals. Participant's NSID numbers and contact information will be removed from the data and replaced with an identification number (different from the NSID number) so that individual data can not be identified by anyone other than the two primary researchers. The list of NSID numbers, contact information, and identification numbers will be kept in a secure and

locked location. The master list of NSID numbers, contact information, and identification numbers will be destroyed once the data from both parts of the study have been linked.

Right to Withdraw: You may withdraw from the study for any reason, at any time, without penalty of any sort (and without loss of relevant entitlements, without affecting academic or employment status, without losing access to relevant services etc). You also have the right to leave individual questions blank. If you withdraw from the study at any time, you are free to contact the researchers and request that the data you have contributed be destroyed. You will still receive your course credit if you withdraw from the study.

Questions: If you have any questions concerning the study, please feel free to contact the researchers at the numbers provided above. This study has been approved on ethical grounds by the University of Saskatchewan Behavioural Sciences Research Ethics Board on (insert date). Any questions regarding your rights as a participant may be addressed to that committee through the Office of Research Services (966-2084). Out of town participants may call collect. At the end of the second questionnaire, there is a question that asks if you would like to receive a summary of the results of this study. If you indicate that you would like to receive such a summary, one will be emailed to you. In addition you may contact the investigators using the contact numbers to request a study summary.

Consent to Participate: I agree to consent to this study, having read and understood the background and procedure. I understand that I am free to withdraw from this study at any time and this will in no way affect my academic status. By checking the “AGREE TO PARTICIPATE” box below, you are consenting to participate in this study. If you choose not to participate, please check “DO NOT AGREE TO PARTICIPATE” and exit the questionnaire

Agree to Participate

Do Not Agree to Participate

Debriefing

Debriefing at Time 1 – October

During the first year of university some students do well and some students experience a lot of difficulty. It is important that researchers and educators understand the experience of first year students. We are surveying students during their first year in university in order to better understand some of the factors that may be related to student adjustment at this time. We need to know more about why some students do well in first year, whereas other students struggle and sometimes drop out of university. **Thank you** for your participation in this study and **thank you** for your time. We hope you will help us with this study again in January.

Debriefing at Time 2 – January

During the first year of university some students do well and some students experience a lot of difficulty. It is important that researchers and educators understand the experience of first year students. We are surveying students during their first year in university in order to better understand some of the factors that may be related to student adjustment at this time. By asking students about how they were doing in November and then again in March, we will be able to look at changes over time and try to understand what might predict why people feel better adjusted to university as compared to feeling as though they are not adapting well to university life. For example, some researchers think that students who move away from home have a harder time adjusting to being at university. In contrast, researchers argue that if you have the social support you need (e.g., friends) you'll do just fine. In general, people who are interested in this area of research talk about risk (like moving away from home) and protective factors (like social support) and how these factors connect to the stresses associated with moving into university. Thank you for helping us to look at how what might make the transition smoother as compared to more difficult. We appreciate the time you have taken to help with this study.

Appendix J

Non Significant findings; t tests for completers and non completers at Time 1.

Measure	Completion status	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Age	time 1 only	145	18.52	1.015	1.159	212	.248
	completed both times	69	18.35	.968			
Grades	time 1 only	143	3.8811	1.01738	-.892	213	.373
	completed both times	72	4.0139	1.05474			
Transition Experience	time 1 only	156	3.3259	.87467	1.052	227	.294
	completed both times	73	3.1941	.90283			
Academic Adjustment	time 1 only	155	5.5764	.85608	.137	225	.891
	completed both times	72	5.5599	.80658			
Social Adjustment	time 1 only	155	6.0166	.94771	1.629	225	.105
	completed both times	72	5.7945	.97489			
Personal Adjustment	time 1 only	155	4.5990	1.08846	.487	225	.627
	completed both times	72	4.5222	1.14070			

Non Significant findings; t tests for women completers and non completers at Time 1.

	Completion status	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Age	time 1 only	106	18.52	1.062	.602	166	.548
	completed both times	62	18.42	.984			
Academic Adjustment	time 1 only	112	5.6000	.82201	.492	175	.623
	completed both times	65	5.5364	.84229			
Social Adjustment	time 1 only	112	5.9530	.91387	1.557	175	.121
	completed both times	65	5.7248	.98412			
Personal Adjustment	time 1 only	112	4.4433	1.09565	.053	175	.958
	completed both times	65	4.4341	1.14410			
Grades	time 1 only	102	3.8824	.95745	-.354	165	.724
	completed both times	65	3.9385	1.05885			

Appendix K

Table. Differences in the three domains of adjustment (social, academic, personal/emotional) as a function of gender and living situation at Time 1.

MANOVA main effects and interaction

Effect	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Observed Power(a)
sex	7.352	3.000	203.000	.000	.098	.984
Living situation	2.808	3.000	203.000	.041	.040	.670
Interaction	1.985	3.000	203.000	.117	.028	.506

Tests of Between-Subjects Effects

Source	Dependent Variable	df	F	Sig.	Partial Eta Squared	Observed Power(a)
sex	Academic Adjustment	1	.170	.681	.001	.069
	Social Adjustment	1	5.224	.023	.025	.624
	Personal Adjustment	1	10.515	.001	.049	.898
Living situation	Academic Adjustment	1	.140	.709	.001	.066
	Social Adjustment	1	5.039	.026	.024	.608
	Personal Adjustment	1	.013	.911	.000	.051
Interaction	Academic Adjustment	1	.112	.738	.001	.063
	Social Adjustment	1	2.097	.149	.010	.302
	Personal Adjustment	1	4.037	.046	.019	.516
Error	Academic Adjustment	205				
	Social Adjustment	205				
	Personal Adjustment	205				
Total	Academic Adjustment	209				
	Social Adjustment	209				
	Personal Adjustment	209				

b R Squared = .003 (Adjusted R Squared = -.011)

c R Squared = .046 (Adjusted R Squared = .032)

d R Squared = .079 (Adjusted R Squared = .065)

Table. Differences in transition experience as a function of gender and living situation at Time 1.

Tests of Between-Subjects Effects

Dependent Variable: Transition Experience

Source	df	F	Sig.	Partial Eta Squared	Observed Power(a)
Living Situation	1	.653	.420	.003	.127
Sex	1	4.369	.038	.021	.548
Living Situ * sex	1	.812	.369	.004	.146
Error	207				
Total	211				

b R Squared = .038 (Adjusted R Squared = .024)

Table. Differences in adjustment indices (social, academic, personal/emotional) as a function of living situation across Time 1 and Time 2.

Multivariate Tests

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Observed Power(a)
Between Subjects	Living situation	.122	2.632	3.000	57.000	.059	.122	.614
Within Subjects	Time	.907	185.641	3.000	57.000	.000	.907	1.000
	Interaction	.046	.915	3.000	57.000	.440	.046	.238

Univariate Tests

Source	Measure	df	F	Sig.	Partial Eta Squared	Observed Power(a)
time	Academic	1	302.537	.000	.837	1.000
	Social	1	238.898	.000	.802	1.000
	Pers/Emo	1	9.171	.004	.135	.846
Time * Living Situ	Academic	1	1.113	.296	.019	.180
	Social	1	1.591	.212	.026	.237
	Pers/Emp	1	.126	.724	.002	.064
Error(time)	Academic	59				
	Social	59				
	Pers/Emo	59				

Univariate Tests of Between-Subjects Effects

Transformed Variable: Average

Source	Measure	df	F	Sig.	Partial Eta Squared	Observed Power(a)
Living Situ	Academic	1	.011	.917	.000	.051
	Social	1	.023	.881	.000	.053
	Pers/Emo	1	4.208	.045	.067	.523
Error	Academic	59				
	Social	59				
	Pers/Emo	59				

Table. Differences in transition experience as a function of living situation across Time 1 and Time 2.

Multivariate Tests

Effect	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Observed Power(a)
Time	.006	1.000	60.000	.941	.000	.051
Time * Living Situ	.745	1.000	60.000	.392	.012	.136

Tests of Within-Subjects Effects

Measure: Transition Experience

Source	df	F	Sig.	Partial Eta Squared	Observed Power(a)
Time	1	.006	.941	.000	.051
Time * Living Situ	1	.745	.392	.012	.136
Error(time)	60				

Tests of Between-Subjects Effects

Measure: Transition Experience

Source	df	F	Sig.	Partial Eta Squared	Observed Power(a)
Living situation	1	.160	.691	.003	.068
Error	60				

Appendix L

Table. Differences in moderate physical activity, vigorous and strength building physical activity, sports team participation, and alcohol consumption as a function of living situation across Time 1 and Time 2.

Univariate Tests

Source	Measure	df	F	Sig.	Partial Eta Squared	Observed Power(a)
Time	Moderate	1	6.232	.015	.097	.690
	Vig/strong	1	.514	.476	.009	.109
	Sports	1	.661	.419	.011	.126
	Drinking	1	.616	.436	.011	.121
Time * Living Situ	Moderate	1	.121	.729	.002	.063
	Vig/strong	1	.188	.667	.003	.071
	Sports	1	.661	.419	.011	.126
	Drinking	1	.005	.943	.000	.051
Error(time)	Moderate	58				
	Vig/strong	58				
	Sports	58				
	Drinking	58				

Tests of Between-Subjects Effects

Source	Measure	df	F	Sig.	Partial Eta Squared	Observed Power(a)
Living situation	Moderate	1	.940	.336	.016	.159
	Vig/strong	1	1.067	.306	.018	.174
	Sports	1	.014	.907	.000	.052
	Drinking	1	.070	.792	.001	.058
Error	Moderate	58				
	Vig/strong	58				
	Sports	58				
	Drinking	58				

Appendix M



**UNIVERSITY OF SASKATCHEWAN
BEHAVIOURAL RESEARCH ETHICS BOARD**

<http://www.usask.ca/research/ethics.shtml>

NAME: Patricia McDougall (Melanie Smith)
Department of Psychology

Beh#: 04-216

DATE: October 19, 2004

The University of Saskatchewan Behavioural Research Ethics Board has reviewed the Application for Ethics Approval for your study "The Transition to University: Adaptation and Adjustment" (Beh 04-216)

1. Your study has been **APPROVED SUBJECT TO THE FOLLOWING MINOR MODIFICATIONS:**

- We assume that you will be collecting contact information from participants so that the follow-up questionnaire can be scheduled. This information should be treated in the same way as the NSID (i.e., stored separately from the questionnaires); participants should be so informed on the consent form.
- Please modify your consent form as follows:
 1. Indicate that the master list of NSID and identification numbers will be destroyed once the data has been linked.
 2. Indicate that participants will receive their course credit even if they withdraw.
- 2. Please send one copy of your revisions to the Office of Research Services for our records. Please highlight or underline any changes made when resubmitting.
- 3. The term of this approval is for 5 years.
- 4. This letter serves as your certificate of approval, **effective as of the time that the requested modifications are received by the Office of Research Services**. If you require a letter of unconditional approval, please so indicate on your reply, and one will be issued to you.
- 5. Any significant changes to your proposed study should be reported to the Chair for Committee consideration in advance of its implementation.

Office of Research Services, University of Saskatchewan

Room 1607, 110 Gymnasium Place, Box 5000 RPO University, Saskatoon SK S7N 4J8 CANADA

Telephone: (306) 966-8576 Facsimile: (306) 966-8597

<http://www.usask.ca/research>

6. **This approval is valid for five years on the condition that a status report form is submitted annually to the Chair of the Committee.** This certificate will automatically be invalidated if a status report form is not received within one month of the anniversary date. Please refer to the website for further instructions: <http://www.usask.ca/research/behavrsc.shtml>

I wish you a successful and informative study.



Dr. Valerie Thompson, Chair
University of Saskatchewan
Behavioural Research Ethics Board

VT/ck